

4.21 Wildlife Resources

4.21.1 Methodology for Analysis

This analysis is based on information from the focused wildlife surveys conducted for the proposed OWEF as well as information found in the CNDDDB and lists of BLM-sensitive species (see Section 3.23 for details). As discussed in Chapter 3.23, focused wildlife surveys were conducted for: flat-tailed horned lizard (*Phrynosoma mcallii*; FTHL), barefoot banded gecko (*Coleonyx switaki*), burrowing owl (*Athene cunicularia*), golden eagle (*Aquila chrysaetos*) nests, migrating raptors, avian point counts, bats, and Peninsular bighorn sheep (*Ovis canadensis nelsoni*; PBS).

4.21.2 CEQA Significance Criteria

The indicators listed below were used to determine if the proposed OWEF would result in significant impacts to wildlife resources pursuant to CEQA. These indicators are the same as the significance criteria for biological resources listed in the CEQA Environmental Checklist, Appendix G of the CEQA Guidelines. Would the proposed OWEF:

- Wild-1 Have a substantial adverse effect, either directly, or through habitat modifications on any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations or by the CDFG or the USFWS; and/or*
- Wild-2 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*
- Wild-3 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
- Wild-4 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

The proposed OWEF would not conflict with local policies or ordinances protecting biological resources (Significance Criterion Wild-3) because the county has no jurisdiction over federal lands (County of Imperial, 1993). Where the proposed OWEF occurs on non-federal lands, it would be consistent with the Imperial County General Plan's Land Use and Conservation and Open Space elements (County of Imperial, 1993) and Land Use Ordinance (County of Imperial, 2009).

The proposed OWEF would not conflict with the provisions of an approved local, regional, or state habitat conservation plan (Significance Criterion Wild-4) since no such plan is applicable to the proposed OWEF site.

For the proposed OWEF, the criteria numbered Wild-3 and Wild-4 were determined to be inapplicable or would result in no impact, and are therefore not addressed further in the impact analysis presented in this section.

4.21.3 Alternative 1: Proposed Action

4.21.3.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts covers construction, O&M, and decommissioning of the proposed OWEF.

Construction

Flat-Tailed Horned Lizard

Direct effects to FTHL from construction include mortality and habitat loss. As noted in Section 3.23, FTHL were only found in the northeast portion of Site 1 (east of Shell Canyon Road). In accordance with the FTHL Rangelwide Management Strategy, all contiguous habitat within two miles of a FTHL sighting will be considered occupied by FTHL. The portion of the OWEF site considered occupied (includes assumed occupied habitat) by FTHL is shown in Figure 3.23-1. Construction activities such as grading, the movement of construction vehicles or heavy equipment, and the installation of OWEF facility components may result in the direct mortality, injury, or harassment of FTHLs including the potential crushing of individuals, disruption of FTHL essential behaviors, disturbance by noise or vibrations from heavy equipment, and handling of FTHL during relocation efforts. These potential impacts identified in the FTHL Rangelwide Management Strategy would be avoided or minimized in accordance with the FTHL Rangelwide Management Strategy by the implementation of Mitigation Measures Wild-1a (compliance monitoring by the Designated Biologist), Wild-1b (biological monitoring by a FTHL-experienced biologist), Wild-1c (Worker Education Awareness Program), Wild-1d (delineating work areas and confining work activities to approved work areas), Wild-1e (15 mile-per-hour speed limit along access roads in FTHL habitat), Wild-1f (grading [to the maximum extent practicable] during the active season), Wild-1g (removal of FTHL from harm's way), and Veg-1a (minimizing construction-related impacts to the maximum extent practicable).

There are approximately 2,752.3 acres of FTHL-occupied habitat (including assumed occupied habitat, as described in Section 3.23) in the proposed OWEF site. The proposed OWEF would permanently impact approximately 23.9 acres of this habitat and would temporarily impact approximately 108.4 acres of this habitat (Figure 4.21-1). Impacts to occupied FTHL habitat would be mitigated by the implementation of Mitigation Measures Air-1 (*Implement a Fugitive Dust Control Plan*), Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring by a FTHL-experienced biologist*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads in FTHL habitat*), Wild-1h (*Compensation for habitat loss in accordance with the FTHL Rangelwide Management Strategy*), Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*), and Veg-2b (*Revegetating temporarily disturbed areas*). Mitigation Measure Wild-1h requires compensation for this habitat loss in accordance with the FTHL Rangelwide Management Strategy.

Construction will be conducted primarily during daylight hours; however, if it becomes necessary to conduct work at night in FTHL habitat, lighting will be needed for worker safety. This lighting will be directed toward the interior of the disturbance area or at the specific location being constructed in order to minimize adverse effects. Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b

(*Biological monitoring by a FTHL-experienced biologist*), Wild-1c (*Worker Education Awareness Program*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Potential indirect effects during construction include increased predation, and habitat degradation that may adversely affect FTHL.

Avian predators of the FTHL, such as common raven (*Corvus corax*), loggerhead shrike (*Lanius ludovicianus*), and American kestrel (*Falco sparverius*), and non-avian predators, such as round-tailed ground squirrel (*Spermophilus tereticaudus*), may be drawn to the OWEF due to the increase in food sources (such as garbage cans) and perching/roosting areas (such as the fences and power poles associated with the substation/switchyard, permanent meteorological tower, and the O&M building). These species, particularly common ravens and round-tailed ground squirrels, would be attracted to food waste during construction if it is not properly contained. Increases in predator species may indirectly impact FTHL if predation on FTHL increases. Impacts associated with predators would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), and Wild-1j (*Implementation of a Raven Control Plan*).

The proposed OWEF would indirectly affect FTHL if it resulted in the introduction of invasive weeds that create vegetative cover that is too dense for FTHL to navigate. As mentioned above, disturbance of soil and vegetation over a total of 132.3 acres of occupied FTHL habitat on the proposed OWEF site will take place during construction. This disturbance can encourage invasive weeds to encroach into the habitat from areas outside the site. In addition, construction vehicles and equipment can transport invasive weed seeds and vegetative parts, within their tires and other various parts under the vehicles, to the proposed OWEF site from other regions. Invasive weed species have the potential to out-compete native species and change the overall quality of the habitat. Habitat degradation could occur through the spread of existing invasive weed species within the area of the proposed OWEF site (e.g., Saharan mustard [*Brassica tournefortii*]) or through the introduction of new invasive weed species to the area of the proposed OWEF site. Impacts associated with introduction or spread of invasive weed species would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring by a FTHL-experienced biologist*), Wild-1c (*Worker Education Awareness Program*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Barefoot Banded Gecko

The barefoot banded gecko was not detected despite exhaustive searches and is assumed to be absent within the 2010 and 2011 survey areas (Dugan, 2011a and 2011b; Figure 3.23-2). Therefore, no impacts would occur to the barefoot banded gecko; no mitigation measures would be required; and a 2081 Incidental Take Permit would not be required unless a barefoot banded gecko is found on site during preconstruction surveys for other species.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

The red-diamond rattlesnake and rosy boa were observed in rocky habitat in the southwest portion of Site 1 and in the western portion of Site 2 during surveys for the barefoot banded gecko. Rosy boa occurs in desert, arid scrub, brushland, and rocky chaparral-covered foothills - particularly where moisture is available, which may limit its distribution and abundance on the site. Red-diamond rattlesnake occurs in arid scrub and rocky desert flats adjacent to desert mountain slopes. Potential impacts to these species

could include direct crushing of individual rosy boas and red-diamond rattlesnakes during vegetation clearing and grading, removal of habitat, and indirect disturbance as a result of noise, vibration, night lighting, invasive weed species, and fugitive dust, similar to the indirect impacts described above for FTHL. These potential impacts would be minimized through implementation of Mitigation Measures Wild-1a (Compliance monitoring by the Designated Biologist), Wild-1b (Conduct biological monitoring, inspect all potential wildlife pitfalls [e.g., trenches, bores, other excavations], and remove wildlife as necessary), Wild-1c (Worker Education Awareness Program), Wild-1d (Delineating work areas and confining work activities to approved work areas), Wild-1e (15 mile-per-hour speed limit along access roads), Wild-1i (Use of shielded directional lighting that is pointed downward), and Veg-1a (Minimizing construction-related impacts to the maximum extent practicable).

Burrowing Owl

Direct effects to burrowing owls from construction can include destruction of burrows/burrow entrances, mortality, and habitat loss surrounding occupied burrows, night lighting, and noise. “Occupied” is defined as a burrow that shows sign of burrowing owl occupancy (e.g., an owl, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance) within the last 3 years (CBOC 1993). Construction activities such as grading, the movement of construction vehicles or heavy equipment, and the installation of OWEF facility components may result in the direct mortality through crushing of adults, young, or eggs within burrows or entrapment of/injury to owls within burrows if burrow entrances become blocked. Construction will be conducted primarily during daylight hours; however, if it becomes necessary to conduct work at night, lighting will be needed for worker safety. Night lighting has the potential to disrupt burrowing owl breeding/nesting behavior if it would be placed in close proximity to occupied burrows. Any night lighting to be used during construction will be directed toward the interior of the disturbance area or at the specific location being constructed in order to minimize adverse effects to owls and other wildlife species. Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Construction noise could impact breeding behavior or reproductive success. In accordance with CDFG (1995), avoidance is the preferred method for dealing with potential project impacts to burrowing owls. To avoid and minimize potential noise impacts on burrowing owls, no construction activities would occur within 160 feet of occupied burrows during the non-breeding season (September 1 – January 31) and no construction activities would occur within 250 feet of occupied burrows during the breeding season (February 1 – August 31), in accordance with Mitigation Measure Wild-2a. Throughout the proposed OWEF site, 19 occupied burrows were observed; 1 of those would be directly impacted by proposed - OWEF construction, and 2 more occur within 160 feet of proposed OWEF construction and would also be considered directly impacted (Figure 3.23-3), in accordance with the guidance provided in the CDFG Staff Report on Burrowing Owl Mitigation (CDFG 1995). Impacts associated with destruction of burrows/burrow entrances and mortality of owls would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1i (*Use of shielded directional lighting that is pointed downward*), Wild-2a (*Conduct pre-construction burrowing owl surveys, avoidance of occupied burrows, and passive relocation if avoidance*

is not possible), Wild-2b (*Vegetation clearing outside of the general avian breeding season*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

The proposed OWEF would result in a loss of 26 acres of burrowing owl foraging habitat resulting from construction activities occurring within 300 feet occupied burrows (6.5 acres of habitat would be lost at each of the 3 occupied burrows in accordance with CDFG [1995]). To offset the loss of foraging and burrow habitat on the OWEF site, compensation would be required through off-site acquisition and permanent protection of 19.5 acres of occupied foraging habitat, on-site revegetation of temporary impacted areas and/or on-site restoration/enhancement of disturbed habitat, in accordance with Mitigation Measure Wild-1m. If off-site acquisition and protection is pursued, the acquisition of occupied owl foraging habitat may overlap with the off-site mitigation required for sensitive vegetation communities (Mitigation Measure Veg-2a), if approved by the BLM and Wildlife Agencies. Furthermore, impacts to burrowing owl foraging habitat would be minimized through the implementation of Mitigation Measures Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Potential indirect effects during construction include degradation of foraging habitat.

The proposed OWEF would indirectly affect burrowing owls if it resulted in the introduction or spread of invasive weed species that result in changes in prey abundance or species assemblages. Soil disturbance during construction can encourage invasive weeds to encroach into the habitat from areas outside the site and weed seed can be introduced to the site if construction vehicles and equipment entering the site is not cleaned properly. Invasive weed species have the potential to out-compete native species and change the overall quality of the habitat. Impacts associated with introduction or spread of invasive weed species would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Golden Eagle

There are no golden eagle nests on the proposed OWEF site. However, the proposed OWEF occurs in the distribution range of golden eagles. There are 5 nesting territories close to the OWEF site, the closest of which includes an inactive nest 2 miles north of the proposed OWEF in the Coyote Mountains (2 of the 5 territories were determined to be active during the 2010 golden eagle nest surveys; WRI, 2011). The closest active nest is approximately 3.2 miles to the north of the proposed OWEF, in the Coyote Mountains. The other active nest is approximately 6 miles to the southwest of the proposed OWEF, near Table Mountain. The number of active territorial pairs of golden eagles in the area surveyed could be higher than the 2 identified in 2010 due to ongoing drought in southern California (WRI, 2011). Construction of the proposed OWEF would not result in direct or indirect impacts to golden eagle nests because of the distance between nest sites and the proposed OWEF and the topographic separation between the nest sites and the proposed OWEF (i.e., the proposed OWEF is in a valley; the nest sites are in the mountains; and the proposed OWEF is not visible from the nest sites).

Construction of the proposed OWEF would permanently remove approximately 155.5 acres of vegetation that could be used by the golden eagle as foraging habitat. The proposed OWEF temporary impacts to approximately 499.1 acres of vegetation would be considered a short-term impact because those areas would be revegetated following construction. Golden eagle observations at the proposed OWEF site were

low over the nearly 3 years of raptor migration counts (0.01 observation/hr during fall 2009 migration counts, none during spring 2010 migration counts, and 0.02 observation/hr during fall 2010 and spring 2011 migration counts). These observations suggest low use of the proposed OWEF site for foraging, especially when compared with other projects (see Section 3-23 for details). Impacts to golden eagle foraging habitat would be minimized by implementation of Mitigation Measures Wild-1b (*Biological monitoring during construction*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1o (*Implement an Eagle Conservation Plan*), Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*), Veg-2a (*Provide habitat compensation/restoration for permanent impacts to sensitive vegetation communities*), and Veg-2b (*Revegetate temporarily disturbed areas*). Construction will be conducted primarily during daylight hours; however, if it becomes necessary to conduct work at night, lighting will be needed for worker safety. This lighting will be directed toward the interior of the disturbance area or at the specific location being constructed in order to minimize adverse effects to golden eagles and other wildlife species. Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Potential indirect impacts to golden eagle foraging habitat during construction include night lighting and degradation of habitat.

Degradation of habitat would indirectly affect golden eagle foraging if it resulted in the introduction or spread of invasive weed species or changes in prey abundance or species assemblages, introduction of invasive weed species as described in the Indirect Impacts section for the burrowing owl. Impacts associated with introduction or spread of invasive weed species would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring*), Wild-1c (*Worker Education Awareness Program*), Veg-1d (*Implement an Integrated Weed Management Plan*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Nesting Birds

The proposed OWEF could result in direct and indirect impacts to nesting bird species protected under California Fish and Game Code sections 3503.5 and 3511 and the Migratory Bird Treaty Act. Construction activities, primarily through removal of vegetation, could cause destruction or abandonment of active nests or the mortality of adults, young, or eggs. Several special status bird species are known or suspected to nest on or in close proximity to the proposed OWEF, including burrowing owl, prairie falcon, loggerhead shrike, and Le Conte's thrasher (Figure 4.21-2). Impacts to burrowing owl nesting and the associated mitigation requirements are discussed in the Burrowing Owl section above. Direct impacts to nesting bird species, including special status species, would be mitigated through implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1p (*Implement a Bird and Bat Conservation Strategy*), Wild-2b (*Vegetation clearing outside of the general avian breeding season or conduct pre-construction nesting bird surveys and incorporate a 100-foot nest buffer around active nests*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

Potential effects to nesting birds during construction include night lighting and construction noise, as described in the Impacts section for burrowing owl. Impacts associated with night lighting and

construction noise would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1i (*Use of shielded directional lighting that is pointed downward*), Wild-2b (*Vegetation clearing outside of the general avian breeding season or conduct pre-construction nesting bird surveys and incorporate a 100-foot nest buffer around active nests*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

Bats

No bat roosts are known to occur within or adjacent to the proposed OWEF; therefore, impacts to bat roosts are not anticipated. The proposed OWEF could result in indirect impacts to bat species if construction activities disrupt nighttime foraging habits. Bat use of the proposed OWEF site is remarkably low. More than 70 percent of the surveys conducted for the proposed OWEF failed to record a single bat during the night, and bat activity was generally restricted to the perimeter of the proposed OWEF site, with infrequent observations of bats. These results are most likely due to a lack of any form of standing water on the site, and therefore, a lack of abundant invertebrate prey that is associated with standing water. Therefore, construction activities would not affect the bat prey base. If night lighting is used during construction, it is expected that insects would be attracted to the lighting, which could in turn attract bats to the construction area. Use of night lighting could therefore have a positive effect on bat species if the lighting attracts and concentrates prey species. Bats that might forage around nighttime construction lighting are not expected to be adversely affected because the WTGs would not yet be in operation so collision with these project components would not occur. Even so, implementation of Wild-1j (*Minimize, shield, and direct night lighting*) and Wild-1p (*Implement a Bird and Bat Conservation Strategy*) are required to minimize construction impacts.

American Badger

Construction of the proposed OWEF has the potential to injure or kill American badgers by crushing them in their dens or crushing den entrances with construction equipment, which would prevent badgers from escaping, similar to the direct impacts described for burrowing owl above. Several of the American badger dens documented on the OWEF site occur in close proximity to proposed project features (Figure 4.21-2). Impacts associated with destruction of dens/den entrances and mortality of American badgers would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1i (*Use of shielded directional lighting that is pointed downward*), Wild-2c (*Pre-construction survey for the American badger, avoidance of active dens, and/or badger relocation*), and Veg-1a (*Minimizing construction-related impacts to the maximum extent practicable*).

Peninsular Bighorn Sheep

No OWEF project components are proposed for construction on land currently occupied by the PBS. The 2011 HELIX/Western Tracking Institute PBS study indicates that the proposed OWEF site is not currently occupied with the exception of the area of the I-8 Island in the southwest portion of Site 1—where no OWEF project components are proposed (Figure 4.21-3). No recent PBS sign has been found in the PBS

study areas except for the I-8 Island and along the portion of Devil's Canyon that lie to the south of Site 1 (Figure 4.21-3).

There would be no direct impacts to PBS designated critical habitat (it does not occur on the proposed OWEF site; Figure 4.21-1), occupied habitat in the I-8 Island, or any PBS watering holes or guzzlers (man-made catch basins designed to enhance natural waters) because none exist on the proposed OWEF site. The potential direct effects of the proposed OWEF include impacts to USFWS Essential Habitat, mortality of PBS as a result of collision with construction equipment, elimination of access to foraging areas, disruption of reproduction or lambing activities, prevention of dispersal or intermountain movements.

Habitat Impacts

The proposed OWEF would directly impact 167.2 acres of USFWS Essential Habitat (124.1 acres of temporary impacts and 43.1 acres of permanent impacts) as a result of construction grading, trenching, and vegetation removal on the OWEF site. A total of 3,691.9 acres of USFWS Essential Habitat occurs on the proposed OWEF site. Impacts to PBS Essential Habitat would be minimized and mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineate work areas and confining work activities to approved work areas*), Wild-1q (revegetate temporary impacts to PBS Essential Habitat), Wild-1r (*Provide compensation for permanent impacts to PBS Essential Habitat*), Veg-1a (*Minimize construction-related impacts to the maximum extent practicable*), and Veg-2b (*Revegetate temporarily disturbed areas*).

Collision with Construction Equipment

Construction equipment has the potential to impact PBS as a result of colliding with PBS resulting in injury or death if PBS are present in the project work areas. The potential effect of colliding with construction equipment would be mitigated through implementation of Mitigation Measures Wild-1a (compliance monitoring by the Designated Biologist), Wild-1b (*Biological monitoring*), Wild-1c (*Worker Education Awareness Program*), Wild-1d (*Delineating work areas and confining work activities to approved work areas*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), and Wild-1t (*Retain a Bighorn Sheep Monitor to monitor construction activities in Essential Habitat and implement a 1,000-foot buffer if PBS are observed on site*).

Access to Foraging Areas

The proposed OWEF has the potential to discourage PBS from foraging in the desert flats and desert washes within the USFWS Essential Habitat if noise, human activity, and/or equipment disturbance during construction prevents PBS from accessing foraging areas. The proposed OWEF would be constructed in two phases and approximately five to 10 WTGs can be erected each week, which means not all of the proposed OWEF's features would be constructed simultaneously. As such, PBS would have access to thousands of acres of other foraging areas on the proposed OWEF site during construction at any one particular WTG location. Construction noise and activities that result in avoidance of foraging areas would affect PBS, but this effect would be minimized by implementation of Mitigation Measures Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), and Wild-1t (*Retain a Bighorn Sheep Monitor to monitor construction activities in Essential Habitat and implement a 1,000-foot buffer if PBS are observed on site*).

In addition, an approximately 50-foot tall biological monitoring observation tower would be located in the central portion of Site 1 (referred to by the Applicant as the Advanced Biological Operations Command and Control Center [ABOCC]) and would include a platform with a 360 degree view of the area. The observation tower would also include an air-conditioned central monitoring control room equipped with radar monitors, video monitors and controls, and radio telemetry data monitors to allow for real-time monitoring. A high resolution video camera and an advanced radar system (Merlin Avian Radar System) would be programmed to monitor for PBS during construction. The radar system would include vertical and horizontal Doppler radar and tracking software that would link radar detections to the video monitoring system. The observation tower and radar system would be used by the Designated Biologist, Biological Monitors, and Bighorn Sheep Monitor to monitor for PBS on the OWEF site during construction, as required by Mitigation Measure Wild-1t.

Reproduction/Lambing Activities

Project construction activities could affect PBS if the activities result in disturbance to reproduction/lambing areas. The OWEF project has been designed to place WTGs, access roads, and other proposed features outside of potential reproduction/lambing areas (i.e., steep rocky areas). For the proposed OWEF, 8 WTGs (WTGs 22-28 and WTG 77) are proposed in direct line of sight and within 3,900 feet (1,200 meters) of the known lambing sites in the I-8 Island, and construction activities in these areas may cause the ewes to abandon these sites or otherwise disrupt normal lambing behavior (Figure 4.21-3). To avoid impacts to the lambing sites, construction of WTGs within 3,900 feet of PBS lambing sites will be precluded from January 1 through June 30 (i.e., the PBS lambing season) when there is direct line of site between the lambing site and the construction area, in accordance with Mitigation Measure Wild-2d. Additionally, site preparation and use of the rail unloading area will be precluded during the lambing season per Mitigation Measure Wild-2d.

Noise from construction is not expected to affect PBS reproduction or lambing activities because of the high existing noise levels from traffic on I-8. HELIX collected preliminary noise measurements within the I-8 Island in March 2011 to determine the ambient noise levels from vehicle traffic. Ambient noise levels in the habitat directly adjacent to the westbound lanes of I-8 ranged from 60-80 dB(A), and ambient noise levels further from the westbound lanes of I-8 averaged between 50-55 dB(A). Construction activities are not expected to result in increases in noise levels at the known PBS lambing sites for 3 main reasons: (1) there will be a seasonal restriction (January through June) on all construction activities within 1,200 meters (approximately 3,900 feet) of lambing sites as required by Mitigation Measure Wild-2d; (2) all other construction activities would be at least 0.5 mile from the known lambing areas, and the noise would dissipate across the landscape; and (3) there is no suitable lambing habitat on the proposed OWEF site; lambing areas are typically located in rugged, secure locations on rocky hillsides to allow ewes to keep lambs protected, and these areas are found outside the proposed OWEF site.

Intermountain Connectivity

PBS are closely associated with mountainous habitat and often are hesitant to venture far from escape terrain (Geist, 1971, as cited in USFWS, 2000). The proposed OWEF would not directly affect PBS intermountain movement for the following reasons: (1) the known movement area between Carrizo Gorge and the Coyote Mountains is along Sweeney Pass (approximately 6 miles northwest of Site 1); (2) the known movement corridor between Carrizo Gorge and the I-8 Island is approximately 2 miles to the south of the proposed OWEF site; (3) the proposed OWEF was redesigned to remove proposed OWEF features originally designed in the southwest portion of Site 1 and to move proposed OWEF features further from

Devil's Canyon; and (4) the proposed OWEF site will not be fenced¹, and post-construction human activity levels are expected to be similar to the pre-construction activity levels due to OHV use, Border Patrol use, illegal activities (e.g., immigrant use and drug smuggling activities), and recreational use. In addition, human activity levels within currently occupied PBS habitat during construction are expected to be similar to pre-construction conditions because the project does not contain new roads or project features within areas currently occupied by PBS.

Behavioral Responses

The proposed OWEF would indirectly affect PBS if construction activities result in behavioral changes. A number of studies have been conducted to evaluate bighorn sheep responses to human activities (e.g., Hicks and Elder, 1979; Keller and Bender, 2007; Papouchis et al., 2001) and generally conclude that bighorn sheep increase their distance to humans, especially when they are approached, but the effects of disturbance are temporary. The proposed OWEF would not be constructed in occupied PBS habitat, would not impact or block access to watering holes, and does not include new access roads into known occupied PBS habitat. However, human activity, noise, and use of night lighting have the potential to indirectly impact PBS. To minimize potential PBS behavioral responses to construction activities, the following mitigation measures will be implemented: Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1t (*Retain a Bighorn Sheep Monitor to monitor construction activities in Essential Habitat and implement a 1,000-foot buffer if PBS are observed on site*), and Wild-2e (Collect data on PBS movements during the construction phase). Impacts associated with night lighting would be mitigated by the implementation of Mitigation Measures Wild-1a (*Compliance monitoring by the Designated Biologist*), Wild-1b (*Biological monitoring during construction*), Wild-1c (*Worker Education Awareness Program*), and Wild-1i (*Use of shielded directional lighting that is pointed downward*).

Habitat Degradation

The proposed OWEF would result in habitat degradation primarily due to the introduction of invasive weed species as described in the Indirect Impacts section for the FTHL. Implementation of Mitigation Measure Veg-1d, which requires the preparation and implementation of an Integrated Weed Management Plan, would reduce this potential impact during construction and for the life of the proposed OWEF.

Operation and Maintenance

Flat-Tailed Horned Lizard

General O&M activities that would be conducted such as visual inspections, oil changes, and gearbox lubrication will result in regular truck traffic on access roads throughout the year, which may result in direct mortality or injury to individual FTHL. In addition, grading of access roads will occur as needed (but will be scheduled to least disturb sensitive wildlife), in accordance with Mitigation Measures Wild-1c and Wild-1x. FTHL injury or mortality could also potentially occur due to weed abatement activities, including application of chemicals or mechanical methods. These potential impacts would be avoided or minimized by the implementation of Mitigation Measures Wild-1u (*Speed limit of 15 miles per hour on*

¹ The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

access roads in occupied FTHL habitat, biological monitoring [relocation of FTHL if necessary] for O&M off of access roads) and Wild-1v (Submit annual FTHL Status Report).

As with construction, avian predators of the FTHL may be drawn to the OWEF due to the increase in food sources such as garbage cans and perching areas such as the fences surrounding the substation/switchyard and the O&M building. A potential increase in avian predators may indirectly affect FTHL. Impacts associated with predators during O&M would be mitigated by the implementation of Mitigation Measures Wild-1v (*Submit annual FTHL Status Report*), Wild-1w (*Implement the Raven Control Plan*) and Wild-1c/Wild-1x (*Implement and ensure compliance with a WEAP*) are required to minimize this potential impact to FTHL during O&M. In addition, an indirect impact to FTHL would occur if the number of avian and non-avian predators increases as a result of higher densities of perennial shrub species (Grant, 2005). Increases in perennial shrub species can occur if considerable amount of water are applied during the construction phase or O&M/revegetation phase. However, only the minimal amount of water needed for dust control would be applied during the construction phase in accordance with Mitigation Measure Air-1 and only the minimum amount of water needed for revegetation of temporary impact areas would be applied during the O&M phase, in accordance with Mitigation Measures Wild-1y and Veg-2b. Night lighting during O&M would be minimized through implementation of Mitigation Measure Wild-1aa (*Minimize night lighting during O&M*).

As with construction, increases in invasive plant species in occupied FTHL habitat would be indirect impacts to FTHL. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Barefoot Banded Gecko

As described above, the barefoot banded gecko is currently considered absent from the OWEF site. Therefore, no mitigation during O&M would be required for this species, and no 2081 Incidental Take Permit would be required unless the species is observed on site during O&M activities.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

Potential O&M impacts could include direct impacts such as crushing/killing of individuals and indirect disturbance as a result of noise, vibration, night lighting, introduction or spread of invasive weed species, and fugitive dust. Direct impacts to rosy boa and red-diamond rattlesnake during O&M would be minimized through implementation of Mitigation Measures Wild-1c/Wild-1x (*Implement and ensure compliance with a WEAP, including scheduling O&M to least disturb sensitive wildlife*), and Wild-1aa (*Minimize night lighting during O&M*). Indirect impacts to rosy boa and red-diamond rattlesnake during O&M would be minimized through implementation of Mitigation Measures Wild-1u (*Measures to reduce wildlife species mortality, including requiring vehicles to remain on designated maintenance roads*), and Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Burrowing Owl

O&M activities have the potential to affect burrowing owls if activities cause destruction of burrows or burrow entrances. Regular O&M activities, such as driving on access roads to make periodic inspections of WTGs, gear box inspections, and lubrication, are not expected to affect the species because activities will remain on permanently maintained access roads, crane pads, and permanent work areas. Implementation of Mitigation Measures Wild-1c/Wild-1x (*Implement and ensure compliance with a*

WEAP) and *Wild-1e* (limiting speed limits on access roads) would minimize impacts on burrowing owls from these types of O&M activities. Other O&M activities, such as vegetation management or regrading access roads that result in disturbance beyond the approved permanent footprint, have the potential to affect burrowing owls if activities cause destruction of burrows or burrow entrances, as described above for the construction phase of the project. These potential impacts to burrowing owls during O&M would be mitigated by the requirement to conduct a pre-construction burrowing owl survey in accordance with Mitigation Measure Wild-2a if O&M activities have the potential to disturb habitat outside of the approved permanent project footprint. To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes actions and reporting procedures to be used if nesting birds are encountered and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP. Impacts associated with night lighting during O&M would be minimized through implementation of Mitigation Measure Wild-1aa (*Minimize night lighting during O&M*).

As with construction, increases in invasive plant species would be indirect impacts to burrowing owl. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

The risk of collision of the burrowing owl with the WTGs is discussed in the Avian and Bat Collision Risk section below.

Golden Eagle

As with construction, O&M would not result in direct or indirect impacts to golden eagle nest sites because there are no golden eagle nests on the proposed OWEF site, and the nearest nest site is a minimum of 2 miles from the proposed OWEF site. O&M activities have the potential to remove golden eagle foraging habitat if regrading of roads or other O&M activities result in vegetation being removed adjacent to the permanent project footprint. If areas need to be regraded, they would be revegetated in accordance with Mitigation Measure Veg-2b. Therefore, O&M activities are not expected to impact golden eagle foraging on the OWEF site.

The risk of collision of the golden eagle with the WTGs is discussed in the Avian and Bat Collision Risk section below.

Nesting Birds

As with construction, O&M activities could result in direct and indirect impacts to nesting bird species protected under the California Fish and Game Code and Migratory Bird Treaty Act. Direct impacts to nesting birds could occur as a result of vegetation management or regrading of access roads, which could cause destruction or abandonment of active nests or the mortality of adults, young, or eggs. Direct impacts to nesting bird species would be mitigated through implementation of Mitigation Measure Wild-2b (*Vegetation clearing outside of the general avian breeding season or conduct pre-construction nesting bird surveys and incorporate a 100-foot nest buffer around active nests*) and Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*). To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes actions and reporting procedures to be used if nesting birds are encountered and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP. Impacts associated with night lighting during O&M would be minimized through implementation of Mitigation Measure Wild-1aa (*Minimize night lighting during O&M*).

As with construction, increases in invasive plant species would be indirect impacts to nesting bird species. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Bats

No bat roosts are known to occur within or adjacent to the proposed OWEF; therefore, impacts to bat roosts during O&M activities are not anticipated. As described in Section 3.23, bat use of the OWEF site was determined to be very low during surveys conducted in 2010, likely as a result of a lack of water sources on and adjacent to the site. Nighttime foraging habitats are not expected to be affected by O&M of the OWEF site because of the low use of the site. However, a minimal amount of night lighting is proposed for the site including at the O&M building and on top of some of the WTGs, which has the potential to attract and concentrate invertebrate prey items. Implementation of Mitigation Measures Wild-1aa would reduce the potential impact on bat species because it requires night lighting to be minimized, shielded, and directed down. Potential O&M impacts on bat species would be further minimized by implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*). Even with implementation of Mitigation Measures Wild-1p, Wild-1aa, and Wild-1bb, bats may be still attracted to areas where night lighting are used and this would increase their risk of collision with WTGs. The risk of collision of bats with the WTGs is discussed in the Avian and Bat Collision Risk section below.

Avian and Bat Collision Risk

Operation of the OWEF site would impact avian and bat species as a result of collisions with project features. Resident and migratory bird and bat species are at risk of collision with the 155 WTGs, four permanent (unguyed) meteorological towers, and the overhead transmission lines, which are limited to an approximately 600-foot-long section that would connect the switchyard to the new Sunrise Powerlink transmission line and an approximately 150-foot-long segment that would connect the proposed switchyard and proposed substation.

In accordance with Wind Turbine Guidelines Advisory Committee's (WTGAC's) recommendations to USFWS for wind projects in general, collision risk for the OWEF is defined as the likelihood that adverse impacts will occur to individuals or populations of species of concern as a result of wind energy development and operation (WTGAC, 2010). A weight-of-evidence approach is often used to analyze risk because relatively few methods are available for direct estimation of risk (Anderson et al., 1999, as cited in WTGAC, 2010). The WTGAC also indicates that "for most populations, risk cannot easily be reduced to a strict metric, especially in the absence of population viability models for most species. Consequently, estimating the quantitative risk to populations is usually beyond the scope of project studies due to the difficulties in evaluating these metrics, and therefore risk assessment will be qualitative" (WTGAC, 2010). Use data for proposed wind sites is often compared to use data of other wind sites to evaluate collision risk. The collision risk analysis presented below incorporates the quantitative data collected during two years of raptor migration count studies, a full year of avian point count studies, and four seasons of bat survey data on the OWEF site. Avian and bat use, observed flight heights, and species behaviors were incorporated into the qualitative collision risk assessment below. The analysis of bat collision risk includes potential impacts due to collision with turbine blades as well as barotrauma (lung damage that results from the air pressure reduction near spinning blades). Following that risk assessment

is a discussion of risk assessment derived from the results of MERLIN™ Avian Radar Survey (DeTect, Inc., 2011).

As noted in Section 3.23, four seasons of raptor migration counts have indicated that raptor use of the site is low (an average of approximately 0.745 observation/hour). Raptor use on the OWEF is low when compared to similar studies conducted for other wind projects (HELIX, 2010c and 2011d). Red-tailed hawk and turkey vulture accounted for nearly 76 percent of the observations made during the four seasons of raptor counts (see Table 3.23-2). Many of the red-tailed hawk observations made were likely repeat observations of the same individual or individuals. These two species were also commonly observed within the proposed rotor swept area (RSA) range of approximately 100-450 feet above ground level. Based solely on use, red-tailed hawk and turkey vulture would have the greatest risk of collision.

Resident raptor species (red-tailed hawk, prairie falcon, and American kestrel) use the site regularly for foraging and perching but do not occur in high densities. Migratory raptor species observed on site include turkey vulture, osprey, Cooper's hawk, sharp-shinned hawk, merlin, ferruginous hawk, and Swainson's hawk. With the exception of turkey vultures, migratory raptor species were uncommon during the fall and spring. The migratory raptor species listed above (excluding turkey vultures) were observed infrequently during the study period; 10 or fewer observations were made of each of the following species during the four seasons of raptor counts: osprey, Cooper's hawk, sharp-shinned hawk, merlin, and ferruginous hawk. Based solely on behavioral use of the site, resident raptor species would be at greater risk to collision than migratory raptor species because they were more frequently observed foraging over the site, including in the proposed RSA.

The following sections analyze collision risk for golden eagles, other special status raptor species, other avian species, and bats.

Golden Eagle

The risk of collision of the golden eagle with the WTGs would occur when eagles use the proposed OWEF site for foraging or during migration. The greatest risk of collision for golden eagles, as with other raptor species, is during foraging because eagles are focused on prey items and may not see the spinning WTG blades. Golden eagle use of the proposed OWEF site for foraging is low, however. The duration of each golden eagle observation (i.e., the amount of time that the eagles were documented on or immediately adjacent to the site) ranged from 1 minute to 1 hour, with most observations lasting from 2 to 10 minutes. The results of the extensive observation hours on the proposed OWEF site indicate that the proposed OWEF site is occasionally used by eagles for foraging, but it was not part of a regularly used foraging area in fall or spring. The foraging behavior observed on site included time flying within the proposed RSA. Several of the golden eagle observations were of eagles in directional flight over the site at an elevation of 1,000 feet or more and these individuals are presumed to be migrating individuals. Because golden eagle use of the proposed OWEF site is low (0.01 observation/hour made over the four seasons of raptor counts; HELIX 2010c and 2011d), the collision risk is considered low.

Golden eagle collision risk impacts would be minimized through implementation of Mitigation Measures Wild-1o/Wild-1ff (*Implement an Eagle Conservation Plan*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

To further reduce the collision risk impact to golden eagles, the Applicant has proposed staffing a biologist full time during daylight hours for the first 10 years of operation of the OWEF project in the proposed biological observation tower, in accordance with the details provided in the draft Eagle Conservation Plan prepared by OE LLC. The draft Eagle Conservation Plan was submitted to the USFWS, CDFG, and BLM for review in March 2011. The primary purpose of staffing a biologist at the biological observation tower during the first 10 years of operations would be to detect golden eagles prior to eagles flying in to the site using the Applicant's Merlin Avian Radar System (which would be placed on top of the ABOCC during O&M and would be programmed to monitor for raptors) and high-resolution video camera system technology, combined with the use of spotting scopes and binoculars. If eagles are detected, the biologist would have the ability to shut down the WTGs in portions of the site to help minimize and avoid collisions with WTGs. The WTG blades would come to a complete stop within 60 seconds of WTGs being shut down. The biologist would be responsible for determining when the eagle has left the project site so that operation of the WTGs could resume.

Other Special Status Raptor Species

Cooper's hawk does not commonly occur within the proposed OWEF site, and the 9 observations likely represent migratory birds passing through the proposed OWEF area. Each observation was a single individual, and four of the nine observations included flight heights in the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Wintering and resident Cooper's hawks are typically found in riparian habitats, which are lacking within the proposed OWEF site. Cooper's hawk use of the proposed OWEF site was low (0.003 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Like the Cooper's hawk, sharp-shinned hawk does not commonly occur within the proposed OWEF site, and the 5 observations likely represent migratory birds passing through the proposed OWEF site. Each observation was a single individual, and all five observations included flight heights below the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Both wintering and resident sharp-shinned hawk are typically associated with riparian habitats, which are lacking within the proposed OWEF site. Sharp-shinned hawk use of the proposed OWEF site was low (0.002 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Ferruginous hawk is an infrequent migrant through the proposed OWEF site and is not a common winter resident. The 4 observations likely represent migratory birds passing through the proposed OWEF site during fall/winter migration. Each observation was a single individual, and three of the four observations included flight heights in the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Wintering ferruginous hawks are more commonly observed in the agricultural complexes east of the proposed OWEF site where rodent populations are typically higher. Ferruginous hawk use of the proposed OWEF site was low (0.001 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Swainson's hawks were observed during previous migration studies only occasionally, and only as individuals, with the exception of a group of 14 that were seen traversing the site on October 22, 2010.

This group was observed moving from north to south at a height of approximately 2,000 feet. Season totals from previous surveys ranged from 1 to 17. In spring 2011, a larger number of Swainson's hawks (51) were observed. During spring migration, thousands of Swainson's hawks fly from South America to various destinations in the extreme north of the North American continent. Large groups of these hawks (dozens to many hundreds) are known to stop overnight and roost in the desert town of Borrego Springs, which is approximately 50 miles northwest of the proposed OWEF site. The majority of the Swainson's hawks observed within the site were moving northwesterly in the general direction of Borrego Springs. The precise route that Swainson's hawks use when flying from Mexico to Borrego Springs is unknown; however, it is likely that they primarily utilize areas containing ridgelines, which would indicate that their primary travel route would not be through the proposed OWEF site (HELIX, 2011d).

Although foraging behavior was not observed, it is expected that the Swainson's hawk could use the site for foraging during migration periods, which would put it at risk for collision. Collision risk for Swainson's hawk is considered low due to the species' low use of the proposed OWEF site during the fall and spring (0.026 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d).

Northern harrier was not frequently observed on the OWEF site (a total of 12 observations were made over four seasons of raptor counts; HELIX, 2010c and 2011d). Each observation was a single individual, and 4 of the 12 observations included flight heights in the proposed RSA. The species was observed foraging on site, which would put it at risk for collision. Northern harriers prey on a variety of species, specializing in small- to medium-sized mammals (Johnsguard, 1990), which occur throughout the proposed OWEF site. Harriers typically hunt by flying at heights closer to the ground, although they will commonly fly at heights within the RSA. The species' use of the proposed OWEF site was low (0.004 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Merlin does not commonly occur on the proposed OWEF site, and the 3 observations likely represent migratory birds passing through the proposed OWEF site. Each observation was a single individual and the three observations were at flight heights below the proposed RSA. Although foraging behavior was not observed, it is expected that the species could use the site for foraging during migration periods, which would put it at risk for collision. Wintering merlins are not common in southern California. Merlin use of the proposed OWEF site was low (0.001 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, overall collision risk for this species is low.

Osprey was not frequently observed on the OWEF site (a total of 10 observations were made over four seasons of raptor counts; HELIX, 2010c and 2011d). Each observation was a single individual and 6 of the 10 observations were at a flight height in the proposed RSA. This species does not commonly occur in the desert during migration and is not expected to use the proposed OWEF site for hunting due to the lack of water bodies within the proposed OWEF site. The species is commonly observed at the Salton Sea, which is located approximately 30 miles northeast of the proposed OWEF site. Osprey use of the proposed OWEF site is low (0.004 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d); therefore, the collision risk for this species is low.

The single observation of 2 peregrine falcons on the proposed OWEF site suggests that the species is a very rare visitor to the proposed OWEF site. The species' use of the proposed OWEF site is low (0.001 observation/hour made over the four seasons of raptor counts) and the species is not expected to forage on site; therefore, the collision risk is low.

The multiple observations (83) of prairie falcons throughout the four seasons of raptor counts on the proposed OWEF site suggest that this is a resident species of the Ocotillo area. The habitat in the southwest portion of the proposed OWEF site and adjacent areas to the north and west of the proposed OWEF site contain suitable nesting habitat for the species. A suspected prairie falcon nest location was noted in the I-8 Island (just south of Site 1), but the location was never definitively documented. The prairie falcons that forage within the proposed OWEF site are at a slightly greater risk of collision as compared to many of the other raptor species because their use of the site was greater (0.03 observation/hour made over the four seasons of raptor counts; HELIX, 2010c and 2011d) and they were commonly observed flying through the RSA.

As noted in Section 3.23, three burrowing owls and one active burrow were observed during the January 2010 habitat assessment, 2 burrowing owl pairs were documented during the June/July 2010 breeding season surveys, and 20 burrowing owls were documented during the fall 2009/winter 2010 special status plant species surveys (HELIX, 2010e and 2011e). Burrowing owls were not observed migrating through the site during the 2009, 2010, or migration counts (HELIX 2010e and 2011e). The increased number of burrowing owls observed on the proposed OWEF site in fall are likely due in part to migrating owls from the northern United States other areas of Imperial County. Although they were not observed within the RSA, it is expected that the owls would fly within the RSA during migratory periods. Therefore, burrowing owl is at risk of collision with the turbines.

Potential collision risk impacts to special status raptor species would be minimized through implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Other Avian Species

Ninety-six percent of avian observations made during the avian point counts study occurred outside of the rotor swept area (RSA) range of approximately 100-450 feet above ground level (HELIX, 2010d). However, there is potential for all recorded avian species to fly within the RSA height range. Given that the proposed OWEF site is not part of a major migratory movement corridor, and the bird abundance is relatively low, overall collision risk for diurnally active avian species is low. It is likely that nocturnal species such as owls (Order Strigiformes), nightjars (Family Caprimulgidae), etc., and species that migrate at night would be at a higher risk of collision as compared to diurnally active species, as the WTGs may not be visible to the species migrating at night.

Three of the special status avian species (non-raptor species) were documented in moderate densities within the proposed OWEF site: Vaux's swifts were common during the fall and spring migratory period; Brewer's sparrow was common during the spring migratory period; and loggerhead shrike was common throughout the year. Each of these species is considered to be at risk of collision because they were commonly observed within the proposed OWEF site, and they were frequently observed flying within the RSA.

The other special status avian species (non-raptor species) observed on the proposed OWEF site were infrequently observed, including long-eared owl, brant, yellow warbler, Le Conte's thrasher, and willow flycatcher. Based on the low use of the site, each of these species is at low risk of collision with the wind turbines.

In addition, turkey vulture and red-tailed hawk, which are not considered special status, are included here because of their prevalence on the proposed OWEF site. Solitary individuals, as well as groups of turkey vultures, were observed flying through the proposed OWEF site during the fall and spring. Turkey vulture is the species with the highest risk of collision because it was the most abundant, and the majority of observations were within the RSA. Turkey vulture use within the proposed OWEF site is low, however, compared to other wind energy sites in the western United States (HELIX, 2010d). Red-tailed hawks are year-round residents of the Ocotillo area. Individuals were observed perching on the transmission line towers that cross through the proposed OWEF site and were observed foraging within the proposed OWEF site throughout the year. This species is at high risk for collision because it was commonly observed flying in the RSA.

Potential collision risk impacts to the other avian species listed above would be minimized through implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Bats

The results of the long-term echolocation station monitoring for the proposed OWEF indicate very low bat use of the proposed OWEF site, and that most of the bats on the proposed OWEF site fly at lower heights than the RSA (Rahn Conservation Consulting, 2011a). This is true for all species except the western mastiff bat, which is typically found flying at higher elevations, particularly when commuting through an area. Observations with the thermal imaging camera showed similar results. For all species of bats observed or detected, they were typically found at heights between 1 to 25 meters (approximately 3 to 82 feet) above ground level. Again, the only exception was the western mastiff bat, which was typically observed above 25 meters (approximately 82 feet, and potentially within the RSA; Rahn Conservation Consulting, 2011a).

Only the western mastiff bat is considered at risk to collide with the WTGs in the RSA. Because of its larger body size and its wing structure, the western mastiff bat is unable to drink from water sources less than 30 meters (approximately 98 feet) long. Because there are no water bodies within the proposed OWEF site that could support this species, and foraging potential is limited, this species probably only moves through the proposed OWEF site infrequently in search of suitable habitat. This species was rarely recorded during the bat surveys for the proposed OWEF (Rahn Conservation Consulting, 2011a and 2011b). Therefore, the potential for this species to collide with the WTGs in the RSA is low.

Potential collision risk impacts to bat species would be minimized through implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1aa (*Night lighting will be minimized by using directional lighting that is shielded down*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Avian Radar Survey

Although the majority of targets were above the RSZ for all seasons, the frequency of low visibility conditions during nocturnal migration could be a more important indicator of collision risk. Atmospheric conditions affect both flight direction and height of migrating passerines (Kerlinger and Moore 1989 in DeTect, 2011), and inclement weather has been identified as an important factor in avian collisions with other tall structures such as power lines, buildings, and particularly communication towers (Manville 2005

in DeTect 2011). It is thought that inclement weather such as low visibility and low cloud ceilings force migrating birds to lower altitudes, increasing their collision risk with tall structures including WTGs (Morrison 2006 in DeTect, 2011). Accordingly, avian collision risk analysis for wind farms typically focuses on time periods when low visibility occurs at night.

The level of avoidance of birds to obstacles under conditions of low visibility at night is not well understood, however, and some avoidance is likely even under these conditions. For the purpose of this survey for the proposed OWEF, low visibility potentially resulting in bird strike risk was defined as visibility less than 0.5-mile based on the National Weather Service's lowest visibility threat level for humans. Observation records from two nearby airports (El Centro Naval Air Facility [NJK] and Imperial County Airport [IPL]) showed very infrequent low visibility. During year one (Sep 15, 2010–July 9, 2011), NJK only had two records of low visibility on October 2, 2010 and three records of low visibility on January 30, 2011, totaling less than 0.1 percent of the hourly observations. The October 2010 records were associated with snow, while fog was noted during the January 2011 observations. IPL also recorded fog on January 30, 2011 as well as on December 19, 2010. The infrequent low visibility at the airports is one indicator that low visibility conditions were likely infrequent in the area during all seasons. However, both airports are greater than 20 miles east of the proposed OWEF site and may have different climatic influences. For example, both airports are in the heart of the Imperial Valley, while the proposed OWEF site is in the desert at the foot of mountain topography.

Potential collision risk impacts to special status targets would be minimized through implementation of Mitigation Measures Wild-1o/Wild-1ff (*Implement an Eagle Conservation Plan*), Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

Avian Electrocutation Risk

Overhead transmission lines also pose an electrocution risk for avian species, particularly for large, aerial perching birds, such as hawks and eagles, because of their large size, distribution, and behavior (APLIC, 2006). Because raptors and other large aerial perching birds often perch on tall structures that offer views of potential prey, the design of transmission poles or towers appears to be a major factor in raptor electrocution (APLIC, 2006). Electrocution occurs when a perching bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. Electrocution can occur when horizontal separation is less than the wrist-to-wrist (flesh-to-flesh) distance of a bird's wingspan or where vertical separation is less than a bird's length from head-to-foot (APLIC, 2006). Electrocution can also occur when birds perched side-by-side span the distance between these elements (APLIC, 2006). Potential impacts associated with electrocution would be minimized through implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1cc (*Design transmission towers and lines to conform with Avian Power Line Interaction Committee standards*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*).

American Badger

As described for burrowing owl above, O&M, such as vegetation management or regrading access roads that result in disturbance beyond the approved permanent footprint, have the potential to injure or kill American badgers by crushing them in their dens or crushing den entrances with O&M equipment, which would prevent badgers from escaping. These potential impacts to American badgers during O&M would

be mitigated by the requirement to conduct a pre-construction survey for the species in accordance with Mitigation Measure Wild-2c if O&M activities have the potential to disturb habitat outside of the approved permanent project footprint. To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes actions and reporting procedures to be used if American badger are encountered and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP.

Peninsular Bighorn Sheep

As with construction, O&M activities have the potential to directly impact PBS through impacts to USFWS Essential Habitat, mortality of PBS as a result of collision with construction equipment, elimination of access to foraging areas, disruption of reproduction or lambing activities, prevention of dispersal or intermountain movements.

As described for burrowing owl above, certain O&M activities (e.g., vegetation management or regrading access roads) could result in disturbance beyond the approved permanent footprint. Impacts to USFWS Essential Habitat would occur if those additional ground disturbance activities occur in USFWS Essential Habitat. Potential impacts to USFWS Essential Habitat would be minimized by implementation of Mitigation Measures PBS monitoring (Mitigation Measure Wild-1gg) in accordance with a Bighorn Sheep Mitigation and Monitoring Plan (Mitigation Measure Wild-1s) and annual status reports on the PBS (Mitigation Measure Wild-1hh). Any disturbance to USFWS Essential Habitat beyond the approved project footprint would need to be mitigated in accordance with Mitigation Measures Wild-1q and Wild-1r. To further reduce this potential impact, Mitigation Measure Wild-1c requires preparation of a WEAP, which includes measures to reduce potential effects on PBS and Mitigation Measure Wild-1x requires annual reporting to ensure compliance with the WEAP.

As with construction, vehicle traffic on access roads have the potential to result in direct impacts to PBS through collision with construction vehicles and equipment. The potential effect of colliding with vehicles during O&M would be mitigated through implementation of Mitigation Measures Wild-1c/Wild-1x (*Implement and document compliance with Worker Education Awareness Program*), Wild-1e (*15 mile-per-hour speed limit along access roads*), Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1gg (*Monitor O&M activities in accordance with the Bighorn Sheep Mitigation and Monitoring Plan, including implementing a 1,000-foot buffer if PBS are observed on site*), and Wild-1hh (*Provide annual PBS status reports*).

O&M activities would not eliminate access to foraging areas because the OWEF site would not be fenced².

As discussed under construction, the proposed OWEF does not include WTGs, access roads, or other features in steep, rocky areas that are reproduction/lambing areas. Noise and activity during O&M activities could affect PBS, however, if the activities result in disturbance to reproduction/lambing areas during the lambing period (January through June). Approximately 8 WTGs are proposed within 3,900 feet of known lambing sites in the I-8 Island. To avoid impacts to the lambing sites, major maintenance activities (e.g., major turbine component replacement or grading—not turbine operation or regular

² The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

maintenance inspections) of WTGs within 3,900 feet of PBS lambing sites will be avoided, as necessary, from January 1 through June 30, in accordance with Mitigation Measure Wild-1gg.

Noise from O&M activities is not expected to affect PBS reproduction or lambing activities because of the high existing noise levels from traffic on I-8. HELIX collected preliminary noise measures within the I-8 Island in March 2011 to determine the ambient noise levels from vehicle traffic. Ambient noise levels in the habitat directly adjacent to the westbound lanes of I-8 ranged from 60-80 dB(A). Ambient noise levels further from the westbound lanes of I-8 averaged between 50-55 dB(A). O&M activities are not expected to result in increases in noise levels at the known PBS lambing sites for three primary reasons: (1) major O&M activities within 3,900 feet of lambing sites would only be allowed to occur between January and June in accordance with Mitigation Measure Wild-1gg; (2) all other O&M activities would be at least 3,900 feet from the known lambing areas, and the noise would dissipate across the landscape; and (3) lambing areas are typically located in rugged, secure locations on rocky hillsides to allow ewes to keep lambs protected.

The use of night lighting during O&M Activities has the potential to disrupt PBS behaviors if PBS are bedding in the vicinity of the night lighting. The following mitigation measure will be implemented Wild-1aa (*Minimize night lighting during O&M*),

O&M is not anticipated to affect PBS intermountain movement for the same reasons that construction is not anticipated to affect intermountain movement.

As with construction, O&M activities have the potential to indirectly impact PBS if activities result in behavioral responses due to noise, and human activities, or if activities result in habitat degradation primarily due to the introduction or spread of invasive weed species. Behavioral responses may also occur as a result of the operating wind farm.

Once the proposed OWEF is constructed, human activity is expected to be similar to pre-project conditions. The proposed OWEF site contains a number of established BLM roads that are used by OHV recreationists year-round, and probably most particularly when the temperatures are cooler (i.e., during the lambing season when PBS would be most likely to venture into the area to forage). These roads are also used by U.S. Border Patrol year-round. Therefore, O&M activities are not expected to have any more effect from vehicular use and human activity than what already occurs in the area. Noise from O&M activities has the potential to disrupt PBS foraging and resting behaviors because PBS tend to avoid areas where disturbance is occurring, as described in the indirect effects to PBS from construction activities. To minimize potential PBS behavioral responses as a result of human activity, noise, and night lighting, the following mitigation measures will be implemented: Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1aa (*Minimize night lighting during O&M*), Wild-1gg (*Monitor O&M activities in accordance with the Bighorn Sheep Mitigation and Monitoring Plan, including implementing a 1,000-foot buffer if PBS are observed on site*), and Wild-1hh (*Provide annual PBS status reports*).

Development and the associated increases in human activities adjacent to and within occupied PBS habitat have the potential to adversely affect PBS by fragmenting PBS use areas. Occupied PBS habitat occurs to the south, west, and north of the proposed OWEF (i.e., the I-8 Island, Carrizo Gorge, and the Coyote Mountains); however, the footprint of the proposed OWEF is located within suitable but currently unoccupied PBS habitat. Post-construction human activity levels on the proposed OWEF site adjacent to PBS-occupied habitat are expected to be similar to pre-construction levels. Therefore, no additional habitat fragmentation of currently occupied PBS habitat would occur as a result of the proposed OWEF.

It is not known how PBS would respond when the WTG blades are operating because behavioral studies in response to wind development sites have not been conducted, and no published studies of PBS use of wind energy project sites are available. Some studies suggest, however, that once the primary disturbance (i.e., construction and human presence) is removed, that ungulates (hoofed animals) will acclimate to remaining infrastructure (Walter et al., 2006). A study by Leslie and Douglas (1980, as cited in Walter et al., 2006) indicated that desert bighorn sheep continued to access water sources in close proximity to a water pumping facility during construction even though alternative watering sources were provided further from construction. Potential impacts to PBS as a result of the operating wind farm would be minimized through the implementation of Mitigation Measures Wild-1s (*Implement a Bighorn Sheep Mitigation and Monitoring Plan*), Wild-1hh (*Provide annual PBS status reports*), Wild-1ii (*Participate in coordination effort with BLM for the design and construction of a wildlife overpass across I-8*), and Wild-2e (*Collect data on PBS movements during the first 3 years of operation*).

As with construction, introduction or spread of invasive plant species during O&M would be an indirect impact to PBS. Impacts associated with invasive plant species during O&M would be minimized through implementation of Mitigation Measure Wild-1z (*Implement the Integrated Weed Management Plan for the life of the project*).

Decommissioning

Decommissioning and reclamation activities associated with the proposed OWEF would result in direct temporary and permanent losses of wildlife species habitats and indirect effects on habitats and species. These activities would include such tasks as vegetation removal, grading, and surface disturbance to remove the WTGs, above-ground electrical components, and substation components, as well as to remove below-ground infrastructure to a depth of 3 feet. They also include surface disturbance to remove roads and to restore vegetation. It is expected that the impacts during decommissioning would be similar to those of construction of the proposed OWEF.

All mitigation measures that are required during construction of the proposed OWEF to avoid or minimize impacts to wildlife resources would also be required during decommissioning and reclamation activities (see section 4.21.9).

4.21.3.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of the proposed OWEF (construction, O&M, decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.21.2. Only those significance criteria, which were determined in Section 4.21.2 to be relevant to the proposed OWEF, are addressed below.

Construction

FTHL

- **Wild-1.** Proposed OWEF construction may result in the direct mortality, injury, or harassment of FTHLs. These would be significant impacts.
- **Wild-1.** The proposed OWEF's impacts to 132.3 acres of FTHL-occupied habitat would be a significant impact.

- **Wild-1.** The proposed OWEF would result in significant indirect impacts to FTHL during construction due to night lighting.
- **Wild-1.** The proposed OWEF would have a significant indirect impact to FTHL if construction activities result in an increase in avian and non-avian predators that prey on FTHL.
- **Wild-1.** The proposed OWEF would significantly impact FTHL if invasive weeds are introduced into FTHL-occupied habitat because it would degrade FTHL habitat.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- **Wild-1.**
- Proposed OWEF construction activities have the potential to significantly impact the rosy boa and red-diamond rattlesnake by direct crushing of individuals during vegetation clearing and grading and removal of habitat.
- **Wild-1.** Proposed OWEF construction activities have the potential to result in significantly indirect impacts to rosy boa and red-diamond rattlesnake through noise, vibration, night lighting, invasive weed species, and fugitive dust.

Burrowing Owl

- **Wild-1 and Wild-2.** The proposed OWEF would result in a significant impact to burrowing owl during construction due to 1 burrow being directly impacted during construction and 2 other burrows considered directly impacted because they occur within 160 feet of the Proposed Action.
- **Wild-1.** The proposed OWEF would significantly impact 19.5 acres of foraging habitat within 300 feet of occupied burrows.
- **Wild-1.** Proposed OWEF construction activities have the potential to result in significantly indirect impacts to burrowing owl through night lighting, construction noise, and degradation of foraging habitat.

Golden Eagle

- **Wild-1.** Construction of the proposed OWEF would result in temporary and permanent impacts to approximately 654.6 acres of vegetation. These impacts would not be considered significant because the impacts are not anticipated to have a substantial adverse affect on golden eagle foraging given the amount of foraging habitat that would remain available to the species on and adjacent to the OWEF site.
- **Wild-1.** Proposed OWEF construction activities have the potential to result in degradation of golden eagle foraging habitat through introduction or spread of invasive weed species, which would be considered a significant indirect impact.

Nesting Birds

- **Wild-1.** The proposed OWEF would result in a significant impact to special status bird species if construction causes destruction or abandonment of active nests or the mortality of adults, young, or eggs.

- **Wild-1.** The proposed OWEF would result in a significant indirect impact to special status bird species if construction causes a loss of reproductive potential resulting from night lighting and construction noise.

Bats

- **Wild-1.** The use of night lighting during construction would not result in a significant impact to special status bat species because it is not expected to adversely affect foraging behaviors.

American Badger

- **Wild-1 and Wild-2.** The proposed OWEF would result in significant impacts to American badgers if individuals and/or dens are crushed during construction activities.

PBS

- **Wild-1.** The proposed OWEF would have a significant direct impact to 167.2 acres of USFWS Essential Habitat for PBS, including temporary impacts to 124.1 acres and permanent impacts to 43.1 acres.
- **Wild-1.** The proposed OWEF would have a significant impact to PBS if construction equipment collides with PBS causing injury or death.
- **Wild-1.** The proposed OWEF would have a significant indirect impact to PBS habitat if construction activities result in the introduction or spread of invasive weed species into PBS foraging habitat.
- **Wild-1.** Human activity, noise, and use of night lighting during construction would have a significant indirect impact on PBS because they would have an adverse effect on PBS behavioral responses.
- **Wild-2.** The proposed OWEF would have a significant impact on PBS if construction activities result in PBS avoiding suitable foraging habitat due to noise, human activity, and/or equipment disturbance.
- **Wild-2.** The proposed OWEF would have a significant impact on PBS if construction activities occur within 3,900 feet of reproduction/lambing areas during the PBS lambing period (January through June).
- **Wild-2.** Construction of the proposed OWEF would not have a significant impact on PBS intermountain movements because the known movement areas do not occur on or directly adjacent to the OWEF site, the OWEF was redesigned to move features further from Devil's Canyon, and the OWEF site will not be fenced³.

³ The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

Operation and Maintenance

FTHL

- **Wild-1.** General O&M activities, re-grading of access roads, weed abatement activities, and emergency maintenance activities in occupied FTHL habitat may result in direct mortality or injury to individual FTHL. These would be significant impacts.
- **Wild-1.** The proposed OWEF would have a significant impact on FTHL habitat if O&M activities (including emergency maintenance) occur beyond the approved project footprint within occupied FTHL habitat.
- **Wild-1.** A potential increase in avian and non-avian predators associated with proposed OWEF O&M may directly affect FTHL through mortality. This would be a significant impact.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on FTHL if invasive weed species are introduced or spread or if night lighting is used in occupied FTHL habitat during O&M activities.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- **Wild-1.** O&M activities have the potential to significantly impact rosy boa and red-diamond rattlesnake through crushing of individuals resulting from vegetation management or road grading.
- **Wild-1.** O&M activities have the potential to result in significant indirect impacts to the species as a result of noise, vibration, night lighting, introduction or spread of invasive weed species, and fugitive dust.

Burrowing Owl

- **Wild-1 and Wild-2.** O&M activities associated with the proposed OWEF have the potential to significantly impact burrowing owls if they cause destruction of burrows or burrow entrances.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on burrowing owl if invasive weed species are introduced or spread or if night lighting is used during O&M activities.

Nesting Birds

- **Wild-1.** O&M activities associated with the proposed OWEF could result in significant impacts to special status nesting bird species resulting from destruction or abandonment of active nests or mortality of adults, young, or eggs.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on special status nesting bird species if invasive weed species are introduced or spread or if night lighting is used during O&M activities.

Avian and Bat Collision Risk

- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact golden eagles as a result of collision with the WTGs.
- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact special status raptor species (Cooper's hawk, sharp-shinned hawk, ferruginous hawk, Swainson's hawk, northern

harrier, merlin, osprey, peregrine falcon, prairie falcon, and burrowing owl) as a result of collision with the WTGs.

- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact special status avian species (Vaux's swift, Brewer's sparrow, loggerhead shrike, long-eared owl, brant, yellow warbler, Le Conte's thrasher, and willow flycatcher) as a result of collision with the WTGs.
- **Wild-1.** Operation of the proposed OWEF, including use of night lighting at the O&M building and WTGs, has the potential to significantly impact special status bat species (western mastiff bat) as a result of collision with the WTGs.

Avian Electrocutation Risk

- **Wild-1.** Operation of the proposed OWEF has the potential to significantly impact special status raptor species as a result of electrocution with transmission lines and electrical components associated with the transmission lines.

American Badger

- **Wild-1.** O&M associated with the proposed OWEF has the potential to significantly impact the American badger by injuring or killing it by crushing it in its den or by crushing den entrances.

PBS

- **Wild-1.** The proposed OWEF would have a significant impact on USFWS Essential Habitat for PBS if O&M activities (including emergency maintenance) occur beyond the approved project footprint.
- **Wild-1.** The proposed OWEF would have a significant impact to PBS if O&M equipment collides with PBS causing injury or death.
- **Wild-1.** The proposed OWEF would have a significant impact on PBS foraging if O&M activities occur within 1,000 feet of PBS.
- **Wild-1.** The proposed OWEF would have a significant indirect impact on PBS if O&M activities result in behavioral changes due to noise, human activity, night lighting, and the operating wind turbines.
- **Wild-1.** The proposed OWEF would have a significant indirect impact to PBS habitat if O&M activities result in the introduction of new invasive weed species or result in the spread existing invasive weed species into potential PBS foraging habitat.
- **Wild-2.** The proposed OWEF would have a significant impact on PBS if O&M activities occur within 3,900 feet of reproduction/lambing areas during the PBS lambing period (January through June).

- **Wild-2.** Proposed OWEF O&M would not have a significant impact on PBS intermountain movements because the known movement areas do not occur on or directly adjacent to the OWEF site and the OWEF site will not be fenced⁴.

Decommissioning

- **Wild-1.** Decommissioning and reclamation activities associated with the Proposed OWEF would result in significant direct temporary and permanent losses of wildlife species habitats and indirect effects on habitats and species similar to those from construction.

4.21.4 Alternative 2: 137 Wind Turbine Generators

4.21.4.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts included below covers construction, O&M, and decommissioning of Alternative 2. The discussion only includes where Alternative 2 differs from Alternative 1: Proposed Action.

Construction

Flat-Tailed Horned Lizard

Impacts to FTHL for this alternative would be reduced as compared to Alternative 1 because Alternative 2 would eliminate 5 WTGs in occupied FTHL habitat. Alternative 2 would eliminate WTGs 158, 165, 166, 170, and 171 (and their associated access roads and underground collection systems) in occupied FTHL habitat. Alternative 2 would permanently impact approximately 22.8 acres of FTHL-occupied habitat and would temporarily impact approximately 100.5 acres of FTHL-occupied habitat. All other direct and indirect impacts to FTHL associated with this alternative 2 would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2.

Barefoot Banded Gecko

The barefoot banded gecko was not detected and is assumed to be absent within the 2010 and 2011 survey areas (Dugan, 2011a and 2011b). Therefore, no impacts would occur to the barefoot banded gecko; no mitigation measures would be required; and a 2081 Incidental Take Permit would not be required unless the species is observed during preconstruction surveys for other species.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

The construction impacts of Alternative 2 on red-diamond rattlesnake and rosy boa would be less than the impacts described for Alternative 1 because the reduced construction area in suitable habitat for these species.

⁴ The OWEF site perimeter would not be fenced. Several components of the OWEF project would be fenced, including the substation/utility switchyard, O&M building, and meteorological towers. If temporary security fencing is needed around temporary construction areas, this will be based on assessment of risk before the start of construction. The design of any permanent or temporary security fences will be determined in coordination with the Wildlife Agencies.

Burrowing Owl

The construction impacts of this alternative on burrowing owl would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 2. As with Alternative 1, this alternative would directly impact 3 occupied burrows and 19.5 acres of foraging habitat, but there would be fewer project features with owl foraging areas.

Golden Eagle

Impacts to golden eagle foraging habitat for this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2. Construction of Alternative 2 would result in temporary and permanent impacts to approximately 615.3 acres of vegetation that could be used by the golden eagle as foraging habitat. Potential indirect impacts to golden eagle foraging habitat as a result of the introduction or spread of invasive weed species associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2.

Nesting Birds

The construction impacts of this alternative on nesting bird species would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 2.

Bats

Effects are anticipated to be the same as for Alternative 1: Proposed Action.

American Badger

The construction impacts of this alternative on American badger would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 2.

Peninsular Bighorn Sheep

Impacts to PBS for this alternative would be reduced as compared to Alternative 1 because Alternative 2 would eliminate 4 WTGs in USFWS Essential Habitat. Alternative 2 would eliminate WTGs 120, 121, 122, and 123 (and their associated access roads and underground collection systems) within USFWS Essential Habitat. Alternative 2 would directly impact 159.4 acres of USFWS Essential Habitat for PBS, including temporary impacts to 117.9 acres and permanent impacts to 41.5 acres. All other direct and indirect impacts to PBS associated with this Alternative 2 would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 2.

Operation and Maintenance

O&M effects of this alternative on FTHL, barefoot banded gecko, special status snake species, burrowing owl, nesting birds, bats, American badger, and PBS would be less than the impacts described for Alternative 1 because of the smaller project size and fewer WTGs associated with Alternative 2. Avian and bat collision risk associated with this alternative would be less than the impacts described for Alternative 1 because of the fewer WTGs associated with Alternative 2. Electrocutation risk associated with Alternative 2 would be the same as the risk described for Alternative 1 because the transmission line requirements are the same for each alternative.

Decommissioning

Effects would be the same as for Alternative 1: Proposed Action.

4.21.4.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 2 (construction, O&M, decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.21.2. Only those significance criteria, which were determined in Section 4.21.2 to be relevant to Alternative 2, are addressed below, and only those that differ from Alternative 1: Proposed Action are included.

Construction

FTHL

- **Wild-1.** Alternative 2 would significantly and permanently impact approximately 22.8 acres of FTHL-occupied habitat and would significantly and temporarily impact approximately 100.5 acres of FTHL-occupied habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Burrowing Owl

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Golden Eagle

- **Wild 1.** Construction of Alternative 2 would result in significant temporary and permanent impacts to approximately 615.3 acres of vegetation that could be used by the golden eagle as foraging habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Nesting Birds

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Bats

- Significance conclusions are the same as for Alternative 1: Proposed Action.

American Badger

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Peninsular Bighorn Sheep

- Alternative 2 would significantly and directly impact 159.4 acres of USFWS Essential Habitat for PBS, including significant temporary impacts to 117.9 acres and significant permanent impacts to 41.5 acres. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Operation and Maintenance

Significance conclusions for O&M associated with Alternative 2 are the same as for Alternative 1: Proposed Action.

Decommissioning

Significance conclusions for decommissioning activities associated with Alternative 2 are the same as for Alternative 1: Proposed Action.

4.21.5 Alternative 3: 105 Wind Turbine Generators

4.21.5.1 Direct and Indirect Impacts

The analysis of direct and indirect impacts covers construction, O&M, and decommissioning of the Alternative 3. The discussion only includes where Alternative 3 differs from Alternative 1: Proposed Action.

Construction

Flat-Tailed Horned Lizard

Impacts to FTHL for this alternative would be reduced as compared to Alternative 1 because Alternative 3 would eliminate 22 of the 33 WTGs in occupied FTHL habitat. Alternative 2 would eliminate WTGs 76, 152-168, 170-172, and 175 (and their associated access roads and underground collection systems) in occupied FTHL habitat. Alternative 3 would permanently impact approximately 8.3 acres of FTHL-occupied habitat and would temporarily impact approximately 41.0 acres of FTHL-occupied habitat. All other direct and indirect impacts to FTHL associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3.

Barefoot Banded Gecko

Alternative 3 would not include any project features in barefoot banded gecko habitat. Therefore, no impacts to the species would occur with this alternative.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

The construction impacts of Alternative 3 on rosy boa and red-diamond rattlesnake would be less than the impacts described for Alternative 1 because the reduced construction area in suitable habitat for these species.

Burrowing Owl

The construction impacts of this alternative on burrowing owl would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 3. As with Alternative 1, this alternative would directly impact 3 occupied burrows and 19.5 acres of foraging habitat, but there would be fewer project features with owl foraging areas.

Golden Eagle

Impacts to golden eagle foraging habitat for this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3. Construction of Alternative 3 would result in temporary and permanent impacts to approximately 494.3 acres of vegetation that could be

used by the golden eagle as foraging habitat. Potential indirect impacts to golden eagle foraging habitat as a result of the introduction or spread of invasive weed species associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3.

Nesting Birds

The construction impacts of this alternative on nesting bird species would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 3.

Bats

Effects are anticipated to be the same as for Alternative 1: Proposed Action.

American Badger

The construction impacts of this alternative on American badger would be less than the impacts described for Alternative 1 because the reduced construction area associated with Alternative 3.

Peninsular Bighorn Sheep

Impacts to PBS for this alternative would be reduced as compared to Alternative 1 because Alternative 3 would eliminate 7 WTGs in USFWS Essential Habitat. Alternative 3 would eliminate WTGs 118-124 (and their associated access roads and underground collection systems) within USFWS Essential Habitat. The underground collection line between Sites 1 and 2, which crosses through USFWS Essential Habitat, would also be eliminated with Alternative 3 because Site 2 is eliminated from this alternative. Alternative 3 would directly impact 151.6 acres of USFWS Essential Habitat for PBS, including temporary impacts to 111.6 acres and permanent impacts to 40.0 acres. All other direct and indirect impacts to PBS associated with this alternative would be reduced as compared to Alternative 1 because of the reduced construction area associated with Alternative 3.

Operation and Maintenance

O&M effects of this alternative on FTHL, special status snake species, burrowing owl, nesting birds, bats, American badger, and PBS would be less than the impacts described for Alternative 1 because of the smaller project size and fewer WTGs associated with Alternative 3. Avian and bat collision risk associated with this alternative would be less than the impacts described for Alternative 1 because of the fewer WTGs associated with Alternative 3. Electrocution risk associated with Alternative 3 would be the same as the risk described for Alternative 1 because the transmission line requirements are the same for each alternative.

Decommissioning

Effects would be the same as for Alternative 1: Proposed Action.

4.21.5.2 CEQA Significance Determinations

Significance conclusions for the impacts identified for each phase of Alternative 3 (construction, O&M, decommissioning) are presented below based on the CEQA Significance Criteria presented in Section 4.21.2. Only those significance criteria, which were determined in Section 4.21.2 to be relevant to Alternative 3, are addressed below, and only those that differ from Alternative 1: Proposed Action are included.

Construction

FTHL

- **Wild-1.** Alternative 3 would significantly and permanently impact approximately 8.3 acre of FTHL-occupied habitat and would significantly and temporarily impact approximately 41.0 acres of FTHL-occupied habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Special Status Snake Species (Red-diamond Rattlesnake and Rosy Boa)

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Burrowing Owl

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Golden Eagle

- **Wild 1.** Construction of Alternative 3 would result in significant temporary and permanent impacts to approximately 494.3 acres of vegetation that could be used by the golden eagle as foraging habitat. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Nesting Birds

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Bats

- Significance conclusions are the same as for Alternative 1: Proposed Action.

American Badger

- Significance conclusions are the same as for Alternative 1: Proposed Action.

Peninsular Bighorn Sheep

- Alternative 3 would significantly and directly impact 151.6 acres of USFWS Essential Habitat for PBS, including significant temporary impacts to 111.6 acres and significant permanent impacts to 40.0 acres. Other impacts, and their significance, would be the same as Alternative 1: Proposed Action.

Operation and Maintenance

Significance conclusions for O&M associated with Alternative 3 are the same as for Alternative 1: Proposed Action.

Decommissioning

Significance conclusions for decommissioning activities associated with Alternative 3 are the same as for Alternative 1: Proposed Action.

4.21.6 Alternative 4: No Issuance of a ROW Grant and No LUP Amendment (No Action)

4.21.6.1 Direct and Indirect Impacts

Under Alternative 4 (No Issuance of a ROW Grant and No LUP Amendment) no action would occur, and existing conditions relevant to biological resources would continue but may be altered at some point in the future by construction of a different wind energy development or another potential project consistent with BLM's California Desert Conservation Area plan. No impacts associated with the proposed OWEF would occur.

4.21.6.2 CEQA Significance Determinations

Alternative 4 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.21.7 Alternative 5: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development (No Project)

4.21.7.1 Direct and Indirect Impacts

Under Alternative 5 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Unsuitable for Wind Energy Development), no action would occur and no future development of the site for wind energy would occur. Existing conditions relevant to biological resources would continue, but may be altered at some point in the future by construction of a potential project other than proposed wind energy development. No impacts associated with the proposed OWEF would occur.

4.21.7.2 CEQA Significance Determinations

Alternative 5 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.21.8 Alternative 6: No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development (No Project)

4.21.8.1 Direct and Indirect Impacts

Under Alternative 6 (No Issuance of a ROW Grant with LUP Amendment to Identify the Area as Suitable for Wind Energy Development), no action would occur but the area would be available to wind power development in the future. No impacts associated with the proposed OWEF would occur. In the future, if another wind development project is implemented, similar impacts to biological resources as those described for the proposed OWEF could occur.

4.21.8.2 CEQA Significance Determinations

Alternative 6 to the proposed OWEF would result in no impacts to biological resources, and no CEQA significance conclusions can be made.

4.21.9 Cumulative Impacts

4.21.9.1 Geographic Extent/Context

The geographic scope for the analysis of cumulative impacts related to biological resources includes the vicinity of all reasonably foreseeable cumulative projects and extends generally throughout western Imperial County and southeast San Diego County, as shown in Figures 4.1-1a and 4.1-1b. The proposed OWEF is located within or adjacent to federal, state, and county lands that are largely undeveloped and support native vegetation communities that provide habitat for wildlife species. The following are areas of biological significance that have potential to be affected by the proposed OWEF and/or the cumulative projects considered herein and the wildlife resources present within them:

- California Desert Conservation Area
- BLM Limited Use and Controlled Use Lands
- ABDSP
- Peninsular Bighorn Sheep Habitat
- Flat-Tailed Horned Lizard Habitat

The specific geographic extent for the analysis of cumulative impacts to special status wildlife resources is as follows and is shown in Figure 4.21-4.

- FTHL—Western Population (west of the Salton Sea, Imperial Valley, and Mexicali Valley; USFWS 2011c)
- Barefoot banded gecko – the extent of its habitat in the U.S. (i.e., eastern San Diego County, western Imperial County along eastern Peninsular Ranges)
- PBS—Essential Habitat in the Coyote, In-Ko-Pah, and Jacumba mountains as well as the desert floor to 10 miles east of the proposed OWEF and south to the Mexico border
- Burrowing owl—the population of burrowing owls in western Imperial County (including the lands west of the Salton Sea and the Imperial Valley)
- Golden eagle and other wide-ranging, special status species—10-mile radius around the proposed OWEF

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resources being evaluated. The geographic scope of this analysis is based on the nature of the geography surrounding the proposed OWEF and the characteristics of each wildlife resource. In addition, each cumulative project will have its own implementation schedule, which may or may not coincide or overlap with the proposed OWEF's schedule. This is a consideration for short-term impacts from the proposed OWEF. However, to be conservative (most particularly for the PBS because the potential effects on its behavior are not predictable), the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the proposed OWEF.

A cumulative impact to special status wildlife resources would occur if the proposed OWEF, combined with the reasonably foreseeable cumulative projects in the vicinity of each resource being evaluated, would result in a beneficial or adverse impact to the resource. For example, a cumulative impact could include (1) special status wildlife resources becoming limited in extent within the cumulative analysis area, (2) special status wildlife resources becoming limited in their population sizes within the cumulative analysis area, or (3) compensation for those impacts not being achieved.

4.21.9.2 Existing Cumulative Conditions

Urbanization, population growth, and continuing development pressure in Imperial and San Diego counties have brought about substantial changes to, and effects on, natural resources. Consequently,

modification, alteration, and/or destruction of vegetation communities and the proliferation of invasive weeds are occurring throughout the region, which affect the wildlife species that live in and migrate through those vegetation communities. Future growth and development in the analysis area will likely continue these impacts.

Vegetation communities are largely similar in the analysis area and consist primarily of a variety of desert scrubs at lower elevations (except in the Imperial valley where agriculture is dominant) and desert transitional habitats (such as semi-desert chaparral and Peninsular juniper woodlands) as well as chaparrals, montane scrubs, oak woodlands, and grasslands at higher elevations (such as in Jacumba, Boulevard, and McCain Valley, San Diego County). These communities support many invertebrate and vertebrate wildlife species including amphibians, reptiles, birds, and mammals. Many of these species are federal or state listed or considered to be special status (see Section 3.23.1.1). The most sensitive of species observed on the proposed OWEF site that also occur elsewhere in the analysis area are the FTHL, golden eagle, Swainson’s hawk, and PBS. Barefoot banded gecko was not observed on the proposed OWEF site but is known to occur to the south and west of the proposed OWEF site, within the I-8 Island, and to the west of the proposed OWEF site in ABDSP.

4.21.9.3 Reasonably Foreseeable Projects

Table 4.1-1 provides a listing of current and reasonably foreseeable projects, including other proposed or approved renewable energy projects, various BLM-authorized actions/activities, proposed or approved projects within the counties’ jurisdictions, and other actions/activities that Lead Agencies consider reasonably foreseeable. Most of these projects have either undergone independent environmental review pursuant to NEPA and/or CEQA or will do so prior to approval. Even if environmental review has not been completed for the cumulative projects described in Table 4.1-1, their effects were considered in the cumulative impacts analyses in this EIS/EIR for the geographic areas described in Section 4.21.9.1. The projects that are located within the geographic area of effect for cumulative impacts are presented in Table 4.1-2 and listed below:

- ESJ Wind Project I
- Imperial Valley Solar – Solar Two
- Coyote Wells Specific Plan
- Ketchum Ranch
- Elder – TPM 20981
- Grizzle – TPM 20719
- Pacific Bell Cell Site
- Sunrise Powerlink
- SDG&E Proposed Photovoltaic Solar Field
- Renewergy, LLC
- Imperial Solar Energy Center – South
- Imperial Solar Energy Center – West
- Pacific Wind Development, LLC, Tule Wind Energy Project (TWEP)
- Superstition Solar 1 (Superstition Sunpeak)

Of particular note, the Sunrise Powerlink project, a new 500-kV transmission line, will traverse northeast-southwest through the proposed OWEF site resulting in impacts to wildlife and wildlife habitats in addition to those that would be caused by the proposed OWEF.

Also of particular note are development projects proposed on large tracts of land, which have the potential to reduce or eliminate large areas of wildlife habitat. Large-scale development projects in the vicinity of the proposed OWEF site include several large proposed solar developments (e.g., the Imperial Valley

Solar-Solar Two project, which would impact 5,130 acres of wildlife habitat and the Superstition Solar 1, which could impact up to 5,516 acres of wildlife habitat; Table 4.21-1). Many of the cumulative projects listed in Table 4.21-1 would result in impacts to the same wildlife species and wildlife habitats that occur on the proposed OWEF site.

4.21.9.4 Construction, O&M, and Decommissioning

Direct impacts to wildlife as a result of the proposed OWEF includes temporary and permanent loss of habitat along with the displacement and/or potential mortality of wildlife species that are poor dispersers such as snakes, lizards, and small mammals. Similarly, the list of cumulative projects implemented in undeveloped areas would have the potential to result in similar impacts. However, the combined effect of impacts to non-special status wildlife species from the proposed OWEF and impacts of the cumulative projects is considered limited because these species are common and wide-ranging within the region. The current and reasonably foreseeable projects within the cumulative impacts analysis area would impact many of same listed and special status wildlife species as the proposed OWEF such as FTHL, burrowing owl, golden eagle, Cooper's hawk, sharp-shinned hawk, prairie falcon, northern harrier, osprey, Vaux's swift, long-eared owl, loggerhead shrike, yellow warbler, LeConte's thrasher, nesting birds, American badger, and PBS (Table 4.21-1). Impacts to these species would be the result of direct loss of suitable habitat, direct loss of individuals, or indirect effects due to human disturbance or changes in habitat quality during construction, O&M, and decommissioning. Only the species common among the cumulative projects and the proposed OWEF are included in Table 4.21-1.

FTHL

Direct and indirect impacts to FTHL associated with the proposed OWEF combined with impacts associated with past, present, and future projects (as shown in Table 4.21-1) are considered a cumulative impact because they would limit the extent and potentially the size of the Western Population of the FTHL. For this reason, the cumulative impact would be considered significant under CEQA.

Using a GIS-based assessment to estimate the area of this portion of the current distribution as defined by the Rangelwide Management Strategy (FTHL ICC, 2003), the USFWS estimated that the Western Population occupies 845,073 acres. Of this acreage, approximately 625,226 acres is within the U.S. Within the U.S. portion of the Western Population, approximately 119,258 acres, or about 19 percent, is non-federal or non-state owned, or is more likely to be developed (USFWS, 2011c). The proposed OWEF and the current and reasonably foreseeable projects could impact up to approximately 7,500 acres of potential FTHL habitat (primarily desert scrubs). Impacts to FTHL habitat associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact to FTHL because these combined impacts have a potential to reduce the extent and population size of the species within the cumulative impacts analysis area. For this reason, the cumulative impact to FTHL would be considered significant under CEQA. The magnitude of the cumulative impact to FTHL habitat is small given that there are 625,226 acres within the cumulative impacts analysis area. The proposed OWEF's permanent impacts to 24 acres of FTHL habitat amounts to less than 0.01 percent of the habitat of the Western Population in the U.S. Still, mitigation is required for impacts to the FTHL and its habitat (for the proposed OWEF, Mitigation Measures Wild-1b, Wild-1c, Wild-1f, Wild-1g, Wild-1h, among others) to minimize impacts to the species. Implementation of these mitigation measures for the proposed OWEF would render the proposed OWEF's contribution to the cumulative impact less than significant under CEQA.

Table 4.21-1. Estimated Impacts*				
Project	Listed Wildlife Species	Critical Habitat, Essential Habitat, (acres) or Movement Corridor	Non-Listed, Special Status Species	Wildlife Species Habitats (Native Vegetation)
Proposed OWEF	Barefoot banded gecko Swainson's hawk Willow flycatcher Peninsular bighorn sheep	Barefoot banded gecko is absent from the proposed OWEF site; no impacts would occur to this species from the proposed OWEF. 71 Swainson's hawks observed migrating through OWEF site over 4 seasons of surveys. No suitable nesting habitat occurs on site. 1 willow flycatcher was observed migrating through the site. No suitable breeding habitat for the species occurs on site. PBS Essential Habitat: 167 ac PBS movement not expected to be affected	Flat-tailed horned lizard habitat – permanent impacts to 24 acres and temporary impacts to 108 acres Burrowing owl – impacts to 4 occupied burrows and 26 acres of foraging habitat Golden eagle – permanent removal of 155.5 acres of foraging habitat (no impacts to nest locations would occur) Potential for collision/electrocution: variety of special status raptor and avian species, as well as western mastiff bat	Desert Scrubs: 633 ac Desert Woodland: 12 ac Badlands/Mudhills: 0.8 ac TOTAL: 646 ac
Coyote Wells Specific Plan	None	None	Flat-tailed horned lizard	Mesquite Hummock : 3 ac TOTAL: 3 ac
Imperial Solar Energy Center-South	None	None	Flat-tailed horned lizard habitat - permanent impacts to 3 acres and temporary impacts to 7 acres Burrowing owl – up to 6 burrows and unspecified amount of habitat would be impacted.	Desert Scrubs: 26 ac Desert Wash: 2 ac TOTAL: 28 ac
Imperial Solar Energy Center-West	None	None	Flat-tailed horned lizard habitat - permanent impacts to 1,065 acres and temporary impacts to 7 acres Burrowing owl - up to 6 burrows and unspecified amount of habitat would be impacted	Desert Scrubs: 14 ac Desert Wash: 7 ac Mesquite Thicket – 6 ac Tamarisk Thicket – 7 ac Abandoned Agriculture – 1,052 ac TOTAL: 1,086 ac
Imperial Valley Solar-Solar Two	Peninsular bighorn sheep	None Project site would be fenced, which was considered a loss of 6,465 acres of foraging habitat PBS movement not expected to be affected	Flat-tailed horned lizard – up to 6,156 acres of impacts Burrowing owl – up to 9 burrows and unspecified amount of habitat would be impacted	Desert Scrubs: 5,130 ac TOTAL: 5,130 ac

Table 4.21-1. Estimated Impacts*				
Project	Listed Wildlife Species	Critical Habitat, Essential Habitat, (acres) or Movement Corridor	Non-Listed, Special Status Species	Wildlife Species Habitats (Native Vegetation)
Sunrise Powerlink	Barefoot banded gecko Peninsular bighorn sheep	Barefoot banded gecko habitat - permanent impacts to 11 acres and temporary impacts to 5 acres PBS Critical Habitat: 7 ac PBS Occupied Habitat: 31 ac Potential to affect PBS movement	Flat-tailed horned lizard - permanent impacts to 35.9 acres and temporary impacts to 131.8 acres 4 golden eagle nest sites impacted along the project route (none occur in the 10-mile radius for the OWEF site) Potential for collision/electrocution: variety of special status raptor, avian species, and bat species	Desert Scrubs: 178 ac Chaparrals: 405 ac Coastal/Montane Scrubs: 94 ac Grasslands/Meadows: 52 ac Riparian Forests/Woodlands: 0.35 ac Woodlands/Forests: 8 ac Unvegetated Channel: 3 ac TOTAL: 740 ac
Energia Sierra Juarez Transmission Line	Peninsular bighorn sheep	None	Potential for collision/electrocution: variety of special status raptor, avian species, and bat species	Desert Scrub: 6 ac Desert Woodland/Scrub: 3 ac TOTAL: 9 ac
Tule Wind Project and ECO Substation	None in common with the Proposed OWEF	None	1 golden eagle nest site impacted along the project; 5 other active territories within 10 miles (none occur within the 10-mile radius for the OWEF site) Potential for collision/electrocution: variety of special status raptor, avian species, and bat species	Desert Scrubs: 145 ac Desert Woodland/Scrub: 98 ac Chaparrals: 569 ac Montane Scrubs: 22 ac Grassland: 5 ac Riparian Scrubs: 0.4 ac Woodlands: 2 ac Unvegetated Channel: 0.6 ac TOTAL: 842 ac
Superstition Solar 1 (Superstition Sunpeak)	Not available	Not available	Appears to be within current distribution of the Western Population of the flat-tailed horned lizard (FTHL ICC, 2003; USFWS, 2011c)	TOTAL 5,516 ac

* Acreages rounded

Barefoot Banded Gecko

The barefoot banded gecko has a limited distribution ranging from eastern San Diego County, western Imperial County, to as far south as central Baja California, Mexico along eastern Peninsular Ranges (CDFG, 2004; Grismer, 2002). It is nocturnal and lives in rocky, boulder-strewn desert foothills where it spends most of its life deep in rock crevices and subterranean chambers. For these reasons, alone, it can be difficult to determine impacts to the species. The Sunrise Powerlink project is only project within the cumulative impact analysis area that is expected impact the species. The Sunrise Powerlink project would be constructed through habitat known to be occupied by the species (within the I-8 Island) and is anticipated to result in permanent impacts to 10.8 acres and temporary impacts to 4.5 acres of occupied gecko habitat.

Potential impacts to the barefoot banded gecko from past, present, and future projects are considered a cumulative impact because these combined impacts have a potential to reduce the extent and population size of the species within the cumulative impacts analysis area. For this reason, the cumulative impact to barefoot banded gecko would be considered a significant impact under CEQA. The magnitude of the cumulative impact to barefoot banded gecko habitat is small given that there tens of thousands of acres within the cumulative impacts analysis area (the exact area of occupied gecko habitat is not known).

The current and reasonably foreseeable projects would be required to implement mitigation measures to minimize impacts to the species. The Sunrise Powerlink project is required to obtain a 2081 Incidental Take Permit for the species and comply with the conditions of that permit.

Burrowing Owl

This burrowing owl is found the length of the State of California in appropriate habitats, but its numbers have been markedly reduced for at least the past 60 years by the conversion of grasslands, by other habitat destruction, and by the poisoning of ground squirrels. The agricultural lands of the Imperial Valley support approximately 70 percent (approximately 6,400 of the 9,000 pairs) of the burrowing owls in the State of California (Wilkerson and Siegel, 2011). The proposed OWEF, combined with most of the current and reasonably foreseeable projects in western Imperial County (see Table 4.21-1) would impact the burrowing owl and have the potential to reduce the population size and extent of the species primarily through alteration and replacement of habitat. For these reasons, the cumulative impact would be significant under CEQA. The magnitude of the cumulative impact to burrowing owls is small (i.e., approximately 25 pairs based on number of known burrows) given that there are approximately 6,400 pairs within the cumulative impacts analysis area. The proposed OWEF's impacts to 3 occupied burrows amounts to less than 0.1 percent of the pairs within the cumulative impacts analysis area. Each of the projects would be required to provide mitigation to offset the loss of burrowing owl burrows and/or surrounding foraging habitat and would be required to avoid direct impacts to occupied burrows (in the case of the proposed OWEF, Mitigation Measures Wild-1l, Wild-1m, Wild-1n, and Wild-2a). These measures associated with the proposed OWEF and the mitigation measures associated with the other current and reasonably foreseeable projects would minimize impacts to the species by, at a minimum, compensating for the loss foraging habitat and protecting breeding burrowing owls by avoiding disturbance to burrows during the nesting season. The measures specific to the proposed OWEF would render the proposed OWEF's contribution to the cumulative impact less than significant under CEQA.

Golden Eagle

Direct and indirect impacts to golden eagle associated with the proposed OWEF combined with impacts associated with past, present, and future projects (see Table 4.21-1) are considered a cumulative impact to golden eagle because the impacts have a potential to reduce the extent and population size of golden eagle in the cumulative impacts analysis area and because compensation for those impacts may not be achievable. Although some of the current and reasonably foreseeable projects listed in Table 4.1-2 would result in impacts to golden eagle nest sites, the proposed OWEF would not impact golden eagle nest sites and, therefore, the proposed OWEF would not contribute to cumulative impacts to such nest sites.

Impacts to golden eagle foraging habitat associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact to golden eagle because the impacts have a potential to limit the extent of the species within the cumulative impacts analysis area. For this reason, the impact would be considered significant under CEQA. The magnitude of the cumulative impact to golden eagle foraging habitat is small (estimated at approximately 12,000-15,000 acres [Table 4.21-1]) given that there is over 250,000 acres of suitable foraging habitat within the cumulative impacts analysis area. The proposed OWEF's permanent impacts to 155.5 acres of habitat amounts to less than 0.1 percent of the available foraging habitat for the species within the cumulative impacts analysis area. The proposed OWEF and the other projects would be required to mitigate impacts to golden eagle foraging habitat. Implementation of Mitigation Measures Wild-1a, Wild-1b, Wild-1d, Wild-1o, Wild-1ff, Veg-1a, Veg-2a, and Veg-2b would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA. Impacts to golden eagles as a result of collision and electrocution are addressed below.

Collision and Electrocution Risk

Resident and migratory bird and bat species are at risk of collision with project features associated with the proposed OWEF and/ past, current, and reasonably foreseeable projects in the cumulative analysis area. These features include such structures as wind turbines, meteorological towers, and overhead transmission lines. Impacts to golden eagle and other special status bird and bat species associated with the proposed OWEF combined with losses associated with past, present, and future projects are considered a cumulative impact to these bird and bat species because the impacts have potential to limit the populations of the species, by causing mortality of individuals to an unknown extent, within the cumulative impacts analysis area. For this reason, the impact would be considered significant under CEQA. The proposed OWEF and the other projects would be required to minimize potential collision risk by implementing mitigation measures. For the proposed OWEF, these include Mitigation Measures Wild-1o/Wild-1ff (*Implement an Eagle Conservation Plan*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*), and Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*). Implementation of these measures would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA.

Overhead transmission lines associated with the proposed OWEF and many of the other current and reasonably foreseeable projects also pose an electrocution risk for avian species, particularly for large, aerial perching birds such as hawks and eagles, because of their large wingspan (APLIC, 2006). Potential electrocution impacts causing losses of golden eagles and raptors associated with the proposed OWEF combined with losses of individual birds from electrocution associated with past, present, and future projects are considered a cumulative impact to these species because the impacts have potential to limit the populations of the species within the cumulative impacts analysis area. For this reason, the impact would

be considered significant under CEQA. For the proposed OWEF, potential impacts associated with electrocution would be minimized through implementation of Mitigation Measures Wild-1p/Wild-1bb (*Implement a Bird and Bat Conservation Strategy*), Wild-1cc (*Design transmission towers and lines to conform with Avian Power Line Interaction Committee standards*), Wild-1dd (*Conduct post-construction bird and bat species mortality monitoring*), and Wild-1ee (*Implement a Wildlife Mortality Monitoring Program*). The other current and reasonably foreseeable projects would be required to implement similar mitigation to reduce potential electrocution impacts. Implementation of the proposed OWEF's mitigation measures would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA.

PBS

Past activities in and adjacent to PBS habitat have caused the distribution of PBS to become more fragmented in the recent past (USFWS, 2001). Additionally, PBS have altered their movement and habitat use patterns in response to human activity (Jorgensen and Turner, 1973; Hicks, 1978; Olech, 1979; Cunningham, 1982; DeForge and Scott, 1982; Gross, 1987; Sanchez et al., 1988, as cited in USFWS, 2010b). The behavioral responses of PBS to human activities may alter how they utilize resources occurring in their environment; these altered behavior patterns may negatively affect population trajectories (2010b). Therefore, direct and indirect impacts to PBS associated with the proposed OWEF combined with impacts associated with past, present, and future projects are considered a cumulative impact to PBS because the impacts have a potential to reduce the extent of the species' distribution and population size in the cumulative impacts analysis area for the reasons stated above (i.e., fragmentation, altered behavioral responses). For these reasons, the cumulative impact would be considered significant under CEQA.

The proposed OWEF and at least three of the current and reasonably foreseeable projects listed in Table 4.21-1 (i.e., Imperial Valley Solar-Solar Two, Sunrise Powerlink, and Energía Sierra Juarez Transmission Line), and possibly other projects within the cumulative impacts analysis area for which information is currently not available, would impact the PBS.

There are approximately 186,000 acres of PBS Essential Habitat (which encompasses PBS Critical Habitat) within the cumulative impacts analysis area. The proposed OWEF would directly impact 167.2 acres (or approximately 0.001 percent) of Essential Habitat. The other three projects that would impact the PBS would directly affect approximately 31 acres of occupied habitat (i.e., Essential Habitat) and seven acres of Critical Habitat, as well as 6,465 acres of PBS foraging habitat (not designated as Essential or Critical Habitat). Even if all of this acreage was considered Essential Habitat (Essential Habitat encompasses all Critical Habitat), this would amount to a loss of approximately 6,500 acres, or 0.03 percent, of the Essential Habitat in the cumulative impacts analysis area, which is a small area. However, the cumulative impact would still be significant under CEQA for the reasons stated above.

The proposed OWEF and the other projects would be required to mitigate impacts to PBS. For the proposed OWEF, implementation of Mitigation Measures Wild-1a through Wild-1e, Wild-1i, Wild-1q through Wild-1u, Wild-1x, Wild-1z, Wild-1aa, Wild-1gg, Wild-1hh, Wild-1ii, Wild-2d, Veg-1a, Veg-1d, and Veg-2b would reduce the proposed OWEF's contribution to this cumulative impact to less than significant under CEQA.

Other Special Status Wildlife Species

Direct and indirect impacts to special status snake species (red-diamond rattlesnake and rosy boa), special status avian species (e.g., Le Conte's thrasher and loggerhead shrike), and American badger associated with the proposed OWEF combined with impacts associated with past, present, and future projects are not considered a cumulative impact to any of these species because the impacts are not expected to reduce the extent or population size of these species in the cumulative impacts analysis area because these species are common and wide-ranging within the region

4.21.10 Mitigation Measures

The following measures would be implemented to avoid or reduce impacts to wildlife species from construction, O&M, and decommissioning of the proposed OWEF. Prior to construction, the following plans would be submitted to the appropriate agencies for review and approval:

- Property Assessment Report (PAR) for FTHL compensation (if off-site purchase of FTHL habitat is proposed)
- Integrated Weed Management Plan
- Fugitive Dust Control Plan
- Worker Education Awareness Program (WEAP)
- Habitat Restoration/Revegetation Plan (HRRP)
- Wildlife Mortality Reporting Program
- FTHL Status Report
- PBS Status Report
- Eagle Conservation Plan (Applicant submitted a Draft Eagle Conservation Plan to agencies for review on March 4, 2011; the Final Eagle Conservation Plan is included as Appendix L9)
- Avian and Bat Protection Plan (Applicant submitted a Draft Avian and Bat Protection Plan to agencies for review on March 29, 2011; the Final Avian and Bat Protection Plan is included as Appendix L6)
- Raven Control Plan
- Bighorn Sheep Mitigation and Monitoring Plan

These plans or programs are explained below in more detail.

Construction and Decommissioning

The following mitigation measures are designed to avoid or reduce impacts to wildlife species during construction and decommissioning of the proposed OWEF.

- Air-1** Implement a Fugitive Dust Control Plan. This measure is presented in Section 4.2.10.
- Veg-1a** Minimize construction related impacts to the maximum extent practicable. This measure is presented in Section 4.17.
- Veg-1d** Implement an Integrated Weed Management Plan to control non-native invasive weeds as developed in cooperation with the BLM and County of Imperial. This measure is presented in Section 4.17.
- Veg-2a** Provide habitat compensation or restoration for permanent impacts to sensitive vegetation communities. This measure is presented in Section 4.17.
- Veg-2b** Temporarily disturbed areas will be revegetated according to a Habitat Restoration/Revegetation Plan (HRRP) approved by the BLM and Wildlife Agencies. This measure is presented in Section 4.17.

Wild-1a Prior to ground disturbing activities, an individual will be designated and approved by the BLM and USFWS as a Designated Biologist⁵ (i.e., field contact representative). A Designated Biologist will be employed for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive Designated Biologist will be approved by the BLM's Authorized Officer (i.e., BLM field manager, El Centro). The Designated Biologist will have the authority to ensure compliance with Conservation Measures for the Peninsular bighorn sheep (PBS) set forth in the Biological Opinion (BO; currently being drafted for the proposed OWEF) and with flat-tailed horned lizard (FTHL) mitigation measures included herein and will be the primary agency contact for the implementation of these measures. The Designated Biologist will have the authority and responsibility to halt any proposed OWEF activities that are in violation of the BO Conservation Measures or Mitigation Measures. A detailed list of responsibilities of the Designated Biologist is summarized below. To avoid and minimize effects to biological resources, the Designated Biologist will:

- Notify BLM's Authorized Officer and the USFWS at least 14 calendar days before the initiation of ground disturbing activities.
- Immediately notify BLM's Authorized Officer and the USFWS in writing if the Applicant does not comply with any BO Conservation Measures or Mitigation Measures including, but not limited to, any actual or anticipated failure to implement BO Conservation Measures or Mitigation Measures within the periods specified.
- Conduct compliance inspections daily during on-going construction as clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM's Authorized Officer until construction is complete.
- Evaluate effectiveness of pre-construction FTHL surveys in locating FTHLs and recommend changes to the pre-construction FTHL survey methods based on the field results.

Wild-1b Biological Monitor(s) will be employed to assist the Designated Biologist in conducting preconstruction surveys and monitoring ground disturbance, grading, construction, O&M, decommissioning, and restoration activities. The Biological Monitor(s) will have sufficient education and field experience to understand PBS and FTHL biology, have, experience conducting FTHL field monitoring, be able to identify PBS, PBS sign, FTHL, and FTHL scat, and be able to identify and follow FTHL tracks. The Designated Biologist will submit a resume, at least three references, and contact information for each prospective Biological Monitor(s) to the BLM and USFWS for approval. To avoid and minimize effects to biological resources, the Biological Monitor(s) will assist the Designated Biologist and Bighorn Sheep Monitor with the following:

- Be present during construction activities that take place in PBS Essential Habitat to prevent or minimize harm or injury to PBS.
- Be present during construction activities that take place in FTHL habitat to prevent or minimize harm or injury to FTHL. Activities of the Biological Monitor(s) include, but are not limited to, ensuring compliance with all avoidance and minimization measures, monitoring for FTHLs and removing them from harm's way, and checking the

⁵ Designated Biologist must have: (1) a Bachelor's degree with an emphasis in ecology, natural resource management, or related science; (2) three years of experience in field biology or a current certification of a nationally recognized biological society such as The Ecological Society of America or the Wildlife Society; (3) previous experience with applying terms and conditions of a Biological Opinion; and (4) an appropriate permit and/or training if conducting focused or protocol surveys for listed or proposed species.

staking/flagging of all disturbance areas to be sure that they are intact and that all construction activities are being kept within the staked/flagged limits.

- At the end of each work day, inspect all potential wildlife pitfalls (e.g., trenches, bores, other excavations) for wildlife and remove wildlife as necessary. If the potential pitfalls will not be immediately backfilled following inspection, the Biological Monitor will ensure that the construction crew slopes the ends of the excavation (3:1 slope) to provide wildlife escape ramps or will ensure that the construction crew completely and securely covers the excavation to prevent wildlife entry.
- During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 29 degrees Celsius (85 degrees Fahrenheit) for the presence of FTHL and remove them per Construction Measure Wild-1r below.
- Inspect the site to help ensure trash and food-related waste is placed in closed-lid containers and to ensure that workers do not feed wildlife.

Wild-1c Prior to proposed OWEF initiation, the Designated Biologist will implement a Worker Education Awareness Program (WEAP) that will be available in English and Spanish. Wallet-sized cards summarizing the information will be provided to all construction and O&M personnel. The WEAP will include the following:

- Biology and status of the PBS, FTHL, special status snake species, burrowing owl, other nesting special status birds, and American badger.
- Measures to reduce potential effects to the PBS, FTHL, special status snake species, burrowing owl, other nesting special status birds, and American badger.
- An explanation of the function of flagging that designates authorized work areas.
- Actions and reporting procedures to be used if PBS, FTHL, special status snake species, burrowing owl, other nesting special status birds, or American badger are encountered.
- Driving procedures and techniques to reduce wildlife species mortality on roads.
- The importance of avoiding the introduction of invasive weeds onto the proposed OWEF site and surrounding areas.
- The importance of containing and properly disposing of all trash.

Wild-1d The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with stakes and flagging prior to construction activities. Spoils will be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor. To the extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized. All disturbances, vehicles, and equipment will be confined to the staked and flagged areas. If fencing is used instead of stakes and flagging, the design of the fencing will be done in coordination with the Wildlife Agencies. Furthermore, the Biological Monitor(s) will be responsible for monitoring to ensure that all delineated disturbance boundaries remain intact and will monitor for any disturbance outside of the boundaries. If fencing is used, it will be the responsibility of the Biological Monitor(s) to determine if any increased impacts are occurring to FTHL by providing fence perches for FTHL predators.

Wild-1e Speed limits along all access roads will not exceed 15 miles per hour in order to minimize dust during construction and O&M activities. A Fugitive Dust Control Plan will be implemented to address fugitive dust during construction (see Mitigation Measure Air-1 in section 4.2.10).

Wild-1f To the maximum extent practicable, grading or other ground-disturbing activities in FTHL habitat will be conducted during the active season, which is defined as March 15 through

November 15, or when ground temperatures are between 24 degrees Celsius (75 degrees Fahrenheit) and 38 degrees Celsius (100 degrees Fahrenheit). If grading or other ground-disturbing activities cannot be conducted during this time, any FTHLs found will be removed to nearby habitat away from proposed OWEF components and roads where suitable burrowing habitat exists. The Designated Biologist or Biological Monitor(s) will be present during any grading or other ground-disturbing activities outside the active season and will be responsible for removing FTHL from harm's way in accordance with Wild-1g.

Wild-1g FTHLs will be removed from harm's way during all construction activities. FTHL removal will be conducted under the supervision of the Designated Biologist and by two or more Biological Monitors when construction activities are being conducted in occupied FTHL habitat. To the extent feasible, methods to find FTHLs will be designed to achieve a maximal capture rate and will include, but not be limited to, using strip transects, tracking, and raking around shrubs. During construction, the minimum survey effort will be 30 minutes per 0.40 hectare (1 acre). Persons that handle FTHLs will first obtain all necessary permits and authorization from the CDFG. FTHL removal surveys also will include:

- Accurate records maintained by the Biological Monitors for each relocated FTHL including sex, snout-vent length, weight, air temperature, location, date, time of capture and release, a close-up photo of the lizard, and a photo of the habitat where it was first encountered. To the extent feasible, a sample of the lizard scat will be collected. A Horned Lizard Observation Data Sheet and a Project Reporting Form, from Appendix 8 of the FTHL Rangelwide Management Strategy (FTHL Interagency Coordinating Committee [ICC] 2003) will be completed. During construction, quarterly reports describing FTHL removal activity will be submitted to the BLM, USFWS, and CDFG.
- The removal of FTHLs out of harm's way, including those found on access or maintenance roads, will include their relocation to nearby suitable burrowing habitat away from proposed OWEF components and roads. Relocated FTHLs will be placed in the shade of a large shrub in undisturbed habitat. The Designated Biologist or Biological Monitor will be allowed some judgment and discretion when relocating lizards to maximize survival of FTHLs found on the proposed OWEF site.

Wild-1h To compensate the loss of occupied FTHL habitat, the FTHL Rangelwide Management Strategy allows for the purchase of FTHL habitat and/or monetary compensation, as determined by the FTHL Interagency Coordinating Committee. Permanent impacts to 23.9 acres and temporary impacts to 108.4 acres of occupied FTHL habitat from the Proposed Action will be mitigated at a 1:1 ratio. If off-site purchase of FTHL habitat is proposed, the Applicant will obtain approval of the BLM, FTHL Interagency Coordinating Committee, and Wildlife Agencies prior to the purchase, and will ensure long-term management and protection of the land through the following:

- Prepare a Property Assessment Report (PAR) tailored to the specific acquisition to determine the long-term management funding; and
- The land will be deeded and transferred to the BLM and managed consistent with the management activities outlined in the FTHL Rangelwide Management Strategy.

Wild-1i Minimize night lighting during construction by using shielded directional lighting that is pointed downward thereby avoiding illumination to adjacent natural areas and the night sky. Night lighting will only be used when necessary for worker safety, and if used for security purposes, will be motion or heat activated.

Wild-1j Implement a Raven Control Plan (approved by BLM and USFWS prior to construction) for the portion of the proposed OWEF within occupied (and assumed occupied) FTHL habitat.

The Raven Control Plan will identify the purpose of conducting raven control and include, at a minimum, training on how to identify raven nests and how to determine whether a nest belongs to a raven or a raptor species; describe the seasonal limitations on disturbing nesting raptors; describe raven control methods to be employed (e.g. perching and nesting deterrents); and describe procedures for documenting the activities on an annual basis. The plan will provide details on the specific measures for storage and disposal of all litter and trash to discourage scavengers that may prey on the FTHL. The methods and reporting requirements will be developed to be consistent with the monitoring and reporting requirements of the Raven Control Plan prepared for the Sunrise Powerlink project, which crosses through the proposed OWEF.

- Wild-1l** Prior to the start of construction, a survey for the burrowing owl will be conducted during the burrowing owl breeding season in accordance with the California Burrowing Owl Consortium (CBOC) Guidelines (1993). If it is discovered that there is an occupied burrowing owl burrow, construction activities will be halted, and the California Department of Fish and Game, in Ontario at (909) 484-0167, MCRodriguez@dfg.ca.gov and the BLM, El Centro, Resources Section, (760) 337-4400 will be notified immediately. Also see Wild-2a.
- Wild-1m** Construction piping or any other construction material with a diameter greater than three inches will be capped or covered if the piping or materials are to be stored in staging areas or temporary impact areas for more than three days. If construction piping or construction materials greater than three inches in diameter are not covered or capped, they will be inspected by the Designated Biologist or Biological Monitor prior to being moved or buried.
- Wild-1n** The loss of 19.5 acres of burrowing owl foraging habitat within 300 feet of the 3 known occupied burrows will be mitigated at a minimum 1:1 ratio through a combination of off-site habitat compensation, on-site revegetation of temporary impact areas, and/or on-site or off-site restoration of disturbed habitat. Actual mitigation acreage requirements will depend on the pre-construction burrowing owl surveys to be conducted in accordance with Mitigation Measure Wild-2a. If off-site purchase of burrowing owl habitat is proposed, the Applicant will obtain approval of the BLM and CDFG prior to the purchase, and will ensure long-term management and protection of the land through a conservation easement and funding to provide long-term management.
- Wild-1o** The Applicant will implement an Eagle Conservation Plan to address proposed OWEF impacts to golden eagles. The Applicant will submit an Eagle Conservation Plan to the BLM and Wildlife Agencies for review and approval prior to initiation of proposed OWEF construction. The Eagle Conservation Plan will be prepared in accordance with the Draft Eagle Conservation Plan Guidance (USFWS, 2011b). The Eagle Conservation Plan will describe the golden eagle studies completed for the proposed OWEF; a risk analysis; advanced conservation practices to be implemented during operations, including a description of the adaptive management strategy for the proposed OWEF and compensatory mitigation; and post-construction monitoring and reporting procedures for golden eagles.
- Wild-1p** The Applicant will implement an Avian and Bat Protection Plan to address proposed OWEF impacts to special status avian and bat species and will submit the plan to the BLM, USFWS, and CDFG for review and approval prior to initiation of proposed OWEF construction. The Avian and Bat Protection Plan will be prepared in accordance with the interim guidance provided by USFWS (2010d). The Avian and Bat Protection Plan will describe proposed OWEF design features and advanced conservation practices to be used to minimize the risk of collision pre-construction, during construction, and during O&M. The plan will include monitoring, adaptive management, and reporting procedures. The post-construction

- monitoring methods will be based on the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (CEC 2007).
- Wild-1q** Temporary impacts to 124.1 acres of USFWS Essential Habitat for PBS from the Proposed Action will be mitigated at a 1:1 ratio through revegetation of all temporary impact areas. Prior to the start of construction, a Habitat Restoration/Revegetation Plan (HRRP) will be approved in writing by BLM, USFWS, and CDFG in accordance with Mitigation Measure Veg-2b (see Veg-2b for details). The HRRP will address revegetation of habitats for special status wildlife species, including but not limited to PBS, FTHL, and burrowing owl. If after five years of monitoring, there are areas that do not meet the success criteria outlined in the HRRP, these areas will be compensated off site at a 1:1 ratio of equal or better quality habitat compared to what was impacted, in accordance with Mitigation Measure Veg-2a.
- Wild-1r** The Proposed Action's permanent impacts to 43.1 acres of USFWS Essential Habitat for PBS will be compensated at a 1:1 ratio by purchasing or restoring Essential Habitat from private landowners, which will be made permanently available for PBS. "Available" is defined as habitat located in or immediately adjacent to the Essential Habitat line, as delineated in the Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (USFWS 2000).
- Wild-1s** Prior to construction, a Bighorn Sheep Mitigation and Monitoring Plan will be submitted to the BLM, USFWS, and CDFG for review and approval. The monitoring plan will describe the monitoring and reporting procedures and the construction limitations to be implemented if sheep are observed in the proposed OWEF site. The monitoring procedures must comply with the standards set by USFWS and CDFG for performing bighorn sheep monitoring.
- Wild-1t** A biological consultant approved by the BLM, USFWS, and CDFG will be retained by the Applicant to serve as the Bighorn Sheep Monitor of construction activities within USFWS Essential Habitat on the proposed OWEF site, in accordance with the Bighorn Sheep Mitigation and Monitoring Plan for the proposed OWEF. The Bighorn Sheep Monitor will be present if proposed OWEF activities are planned within 300 meters (approximately 1,000 feet) of Essential Habitat. If PBS are observed within the Action Area, no construction activities will be conducted within 1,000 feet of the sheep until the Bighorn Sheep Monitor verifies that the sheep have moved to at least 1,000 feet from planned activities. If the Bighorn Sheep Monitor determines that proposed OWEF activities are unlikely to adversely affect or disrupt normal behavior of the PBS, planned activities may proceed. If the Bighorn Sheep Monitor is not present on site when sheep are observed, all proposed OWEF activities within 1,000 feet of Essential Habitat will stop, and the Bighorn Sheep Monitor will be contacted immediately for guidance on how to proceed with planned activities. The Bighorn Sheep Monitor will have complete access to the Applicant's proposed ABOCC observation tower and radar and camera system. The Bighorn Sheep Monitor will prepare daily monitoring reports that will be submitted to the Designated Biologist and BLM, as well as to the USFWS and CDFG.
- Wild-2a** A survey will be conducted within 30 days prior to the initiation of construction or major O&M activities (e.g., major turbine component replacement or grading—not turbine operation or regular maintenance inspections) by a qualified biologist to determine the presence or absence of the burrowing owl in the work zone plus 250 feet beyond. If it is discovered that there is an occupied burrowing owl burrow, activities will be halted, and the California Department of Fish and Game, in Ontario at (909) 484-0167, MCRodriguez@dfg.ca.gov and the BLM, El Centro, Resources Section, (760) 337-4400 will be notified immediately. No disturbance will occur within 250 feet of occupied burrows during the breeding season (February 1 through August 31) or within 50 meters (approximately 160 feet) of occupied burrows during the non-breeding season (September 1

through January 31; CDFG 1995). The results of the burrowing owl survey will be provided to BLM and CDFG for review and concurrence prior to the start of construction or major O&M activities.

Passive relocation of owls will be implemented prior to construction or major O&M activities only at the direction of the CDFG, and only if the above-described occupied burrow disturbance absolutely cannot be avoided (e.g., due to physical or safety constraints). Relocation of owls will only be implemented during the non-breeding season (September 1 through January 31; CDFG, 1995). A Burrowing Owl Mitigation and Monitoring Plan will be submitted to the BLM's Authorized Officer and CDFG for review and approval prior to construction, major O&M activities, and passive relocation.

Wild-2b Vegetation clearing will take place outside of the general avian breeding season (February 15-September 1), when feasible. If vegetation clearing cannot occur outside the avian breeding season, the Designated Biologist/Biological Monitor will conduct a preconstruction survey for nesting birds no more than 7 days prior to vegetation clearing. If no active nests are found, clearing can proceed. If active nests are found, no clearing would be allowed within 100 feet of the active nests of non-listed species, 300 feet of the active nests of listed species, and 500 feet of active raptor nests until the Designated Biologist/Biological Monitor determines the nest is no longer active or the nest fails. The Designated Biologist/Biological Monitor will submit the results of the pre-construction nesting bird surveys to BLM and appropriate agencies.

Wild-2c A qualified biologist will survey for American badger concurrent with the pre-construction survey for burrowing owl. If badgers are detected, the biologist will passively relocate badgers out of the work area prior to construction if feasible. If an active den is detected within the work area, the Applicant will avoid the den, if feasible, until the qualified biologist determines the den is no longer active. Dens that are determined to be inactive by the qualified biologist will be collapsed by hand to prevent occupation of the den between the time of the survey and construction activities.

Wild-2d Construction of WTGs within 1,200 meters (approximately 3,900 feet) of PBS lambing sites will be precluded during the PBS lambing season (i.e., January 1 through June 30). For the proposed OWEF, 8 WTGs (WTGs 22-28 and WTG 77) are proposed within 1,200 meters of 2010 lambing sites in the I-8 Island (i.e., the area between the eastbound and westbound lanes of I-8, the northern portion of which is in the Project Area), and there is direct line of sight between the lambing areas and the proposed WTGs. In addition, four additional WTGs (WTGs 19-21 and WTG 29) would not be constructed during the lambing season because the access road to these WTGs would also be restricted from use by heavy equipment during the lambing season. Furthermore, site preparation and use of the staging area adjacent to the existing railroad will be precluded during the lambing season. The Bighorn Sheep Monitor will coordinate with USFWS and CDFG to help determine the locations of any nearby lambing sites being used prior to and during the construction period of the proposed OWEF.

Wild-2e A biological consultant approved by the BLM and wildlife agencies will be retained by the Applicant to collect data on PBS movements in the Project Area during the construction phase. The study methods will be described in the Bighorn Sheep Mitigation and Monitoring Plan and submitted to the BLM, USFWS, and CDFG for review and approval.

Operation and Maintenance

The following measures will be implemented during O&M of the proposed OWEF.

Wild-1u The Designated Biologist or Biological Monitor(s) will evaluate and implement the best measures to reduce FTHL and other wildlife species mortality along access and maintenance roads, particularly outside the active period (March 15 through November 15). These measures will include:

- A speed limit of 15 miles per hour in occupied FTHL habitat, and all vehicles must remain on designated access/maintenance roads.
- Pedestrian access outside the limits of the designated access/maintenance roads is permitted year-round as long as no ground disturbing activities take place (e.g., vegetation treatment and weed management or other activities that would require soil disturbance beyond pedestrian footprints).
- Any O&M activity that may result in ground disturbance outside the designated access/maintenance roads will be conducted during the FTHL active period whenever feasible.
- If any O&M activity must be conducted outside the FTHL active period that may result in ground disturbance, such as weed management or vehicular access off of a designated access/maintenance road, the Designated Biologist or a Biological Monitor will be present during such activity to ensure that no FTHL mortality results.
- If fencing is installed during any O&M activity, the design of the fencing will be done in coordination with the Wildlife Agencies. Furthermore, the Biological Monitor(s) will be responsible for monitoring to ensure that all fencing remains intact and will monitor for any disturbance outside of the fencing. It will also be the responsibility of the Biological Monitor(s) to determine if any increased impacts are occurring to FTHL by providing fence perches for FTHL predators.

Implementation of these measures will be based on FTHL activity levels, the best professional judgment of the Designated Biologist or Biological Monitor, and site-specific road utilization. FTHL found on access/maintenance roads, if/when monitoring is required, will be relocated as discussed above.

Wild-1v No later than January 31 of each year the proposed OWEF remains in operation, the Designated Biologist will provide the BLM's Authorized Officer, USFWS, CDFG, and FTHL Interagency Coordinating Committee an annual FTHL Status Report that will include at a minimum:

- A general description of the status of the proposed OWEF site.
- Information from the Annual Compliance Report documenting compliance/non-compliance with each avoidance and minimization measure.
- An assessment of the effectiveness of each avoidance and minimization measure.
- A completed Project Reporting Form from Appendix 8 of the FTHL Rangewide Management Strategy (FTHL ICC 2003).
- A summary of information regarding any FTHL mortality in conjunction with the Wildlife Mortality Reporting Program (Mitigation Measure Wild-1hh).
- Recommendations on how the avoidance and minimization measures might be changed to more effectively avoid or minimize future effects to FTHL.

Wild-1w Implement the Raven Control Plan.

- Wild-1x** An annual report will be prepared by the Designated Biologist and submitted to the relevant resource agencies documenting the implementation of the following programs/plans as well as compliance/non-compliance with each avoidance and minimization measure.
- Weed Management Plan
 - Worker Education Awareness Program
 - Habitat Restoration/Revegetation Plan
 - Wildlife Mortality Reporting Program
 - Raven Control Plan
 - Bighorn Sheep Mitigation and Monitoring Plan
 - Burrowing Owl Mitigation and Monitoring Plan
- Wild-1y** The HRRP will be implemented in accordance with Mitigation Measure Veg-2b.
- Wild-1z** Implement the Integrated Weed Management Plan. Invasive weeds and non-native plants will be controlled during O&M for the life of the proposed OWEF according to the measures provided in the proposed OWEF's Integrated Weed Management Plan.
- Wild-1aa** Night lighting will be minimized by using directional lighting that is shielded down away from the surrounding natural areas and the night sky. Night lighting during O&M will be minimized to the amount necessary to meet Federal Aviation Administration (FAA) standards. Lighting on wind turbine generators (WTGs) will include the minimum number of flashes and the briefest flash duration to meet FAA standards. The proposed directional motion activated security lighting at the O&M building will be shielded down.
- Wild-1bb** Implement the Avian and Bat Protection Plan.
- Wild-1cc** Project transmission lines will conform to Avian Power Line Interaction Committee (APLIC) standards for collision-reducing techniques (APLIC 2006).
- Wild-1dd** A biological consultant approved by the BLM, USFWS, and CDFG will be retained by the Applicant to conduct a post-construction bird and bat species mortality monitoring program in accordance with the monitoring and reporting methods of the Eagle Conservation Plan (Mitigation Measure Wild-1o) and Avian and Bat Protection Plan (Mitigation Measure Wild-1p).
- Wild-1ee** Prepare and receive approval from the BLM of a Wildlife Mortality Reporting Program. This program will be implemented during O&M and calls for the identification and reporting of any dead or injured animals observed by personnel conducting O&M activities. Reporting is necessary during construction and O&M to demonstrate compliance with the avoidance and minimization measures, to assess the effectiveness of the measures, and to make recommendations, if necessary, for future compliance. An appropriate reporting format will be developed in coordination with the BLM and USFWS.
- Wild-1ff** Implement the Eagle Conservation Plan.
- Wild-1gg** The Designated Biologist, Biological Monitor(s), and/or Bighorn Sheep Monitor will evaluate and implement the best measures to minimize PBS disturbance. These measures will include:
- The Bighorn Sheep Monitor will monitor major O&M activities (e.g., activities that require soil disturbance, removal of turbine blades, or use of large equipment such as cranes, but not such activities as WTG operation or regular maintenance inspections) in accordance with the measures described in the Bighorn Sheep Mitigation and Monitoring Plan. If PBS are observed or detected by the Designated Biologist, Monitoring Biologist, or Bighorn Sheep Monitor within the Project Area, these types of major O&M activities will not be conducted

within 1,000 feet of the sheep until the Bighorn Sheep Monitor verifies that the sheep have moved to at least 1,000 feet from the major O&M activities. If the Bighorn Sheep Monitor determines that proposed activities are unlikely to adversely affect the sheep or disrupt normal behavior, these activities could proceed. If the Bighorn Sheep Monitor is not present on site when sheep are observed, all of these types of major O&M activities will stop, and the Bighorn Sheep Monitor will be contacted immediately for guidance on how to proceed. O&M activities could proceed when the Bighorn Sheep Monitor/Designated Biologist verifies that the sheep have moved to at least 1,000 feet from the major O&M activities or determines that proposed activities are unlikely to adversely affect the sheep or disrupt normal behavior.

- The Applicant will employ a biologist at the ABOCC observation tower full time for the first 10 years of operation. The success of the monitoring will be determined by the monitoring biologist in coordination with USFWS, CDFG, and BLM. The monitoring biologist will be approved by the BLM and USFWS. The two primary responsibilities of the biologist will be to monitor for PBS and raptors. The Merlin Avian Radar System will be placed on the ABOCC observation tower during O&M and will be programmed to monitor the sky for raptors and not the ground for PBS.
- All vehicles must remain on designated access/maintenance roads.
- The biological consultant retained to collect data on PBS movements in the Project Area during the construction phase (Mitigation Measure Wild-2e) will also be retained to collect data on PBS movements in the project area during the first five years of operation of the OWEF.

Wild-1hh No later than January 31 of each of the first three years the OWEF remains in operation, the Designated Biologist will provide the BLM's Authorized Officer, USFWS, and CDFG an annual PBS Status Report that will include at a minimum:

- A general description of the status of the proposed OWEF site.
- Information from the Annual Compliance Report documenting compliance/non-compliance with each avoidance and minimization measure.
- An assessment of the effectiveness of each avoidance and minimization measure.
- A summary and map of PBS sightings within the proposed OWEF site.
- Recommendations on how the avoidance and minimization measures might be changed to more effectively avoid or minimize future effects to PBS.

Wild-1ii The Applicant will participate in the coordination effort between BLM and proponents of other planned renewable energy projects in or near Peninsular bighorn sheep habitat to fund the design and construction of a wildlife overpass across I-8, at locations determined by species experts and the wildlife agencies to be most likely to benefit the species. An overpass would reduce the risk of mortality from collision with vehicles on I-8 and promote regional connectivity. Further, it would support the affected population's current southward expansion that is a critical part of population recovery.

Impacts of Mitigation Implementation

Implementation of some of the mitigation measures described above could cause certain environmental effects, which would primarily be temporary in nature. Specifically, implementation of Mitigation Measures Wild-1r, Wild-1y, and Wild-1z could cause disturbance to special status wildlife resources as a result of the use of herbicides, increased human activity, and the use of vehicles throughout the project area that may result in wildlife mortality.

In accordance with Mitigation Measure Wild-1r, tamarisk (*Tamarix* sp.) removal would be conducted at Carrizo Marsh specifically to provide compensatory mitigation for project impacts to jurisdictional habitat, PBS Essential Habitat, and sensitive vegetation communities. This restoration effort has the potential to impact the state and federally listed endangered least Bell's vireo (LBV; *Vireo bellii pusillus*), which breeds in the Carrizo Marsh restoration area. Potential impacts to the LBV include disruption of nesting activities through temporary human presence, mechanized noise, and habitat alteration (albeit tamarisk removal would benefit the LBV). In order to minimize or avoid potential impacts to the LBV, measures would be implemented as part of the OWEF Off-Site Habitat Restoration Plan (Appendix L2), which include, but are not limited to: (1) conducting a pre-restoration activity survey for the LBV; (2) having restoration work supervised by a USFWS-approved LBV biologist; and (3) removing tamarisk outside the LBV breeding season, and preserving islands of habitat based on typical LBV territory size.

Implementation of weed control as part of the Habitat Restoration and Revegetation Plan (Wild-1y) and Integrated Weed Management Plan (Wild-1z) has the potential to impact special status wildlife resources on the proposed OWEF site. For example, wildlife could be crushed by vehicles used to access the site, and herbicide application could harm wildlife due to incidental exposure to herbicide. Invasive weed populations that occur in and directly adjacent to temporary project disturbance areas will be controlled using physical and chemical means. Maps of existing invasive weed populations within the OWEF project area have been provided in the Draft IWMP. Appendix A of the Draft IWMP includes a description of the physical and chemical control techniques for each of the noxious weeds within the project area. The two herbicides that would be used for weed control include glyphosate (trade names Roundup Pro, Aqua Neat [approved for use in wetland areas] among others) and triclopyr (trade name Tahoe 4E among others), which are herbicide chemicals found in several commonly used herbicides such as and Tahoe 4E. The schedule for weed control, as defined in the Draft IWMP, includes semi-annual visits to treat weed growth in mid-winter and in mid-spring. The schedule for weed control within the temporary disturbance areas to be revegetated, as part of the HRRP, would include quarterly visits initially and may be reduced to semi-annual visits towards the end of the 5-year revegetation period. Application of herbicides to control weed growth would be implemented in accordance with the Programmatic EIS for using herbicides on BLM lands (BLM 2007). The amount of herbicide to be used will be dependent upon the phenology of each of the weed populations, size of the populations, and time of year. Application rates will be in accordance with the BLM's Programmatic EIS and herbicide product labels, which state that the maximum application rates for glyphosate are a 5 percent solution for backpack sprayers and a 33 percent solution for a sponge applicator; the maximum application rate for triclopyr is 8 quarts of herbicide per acre of weeds treated.

Measures, such as, but not limited to, using herbicides with low toxicity to wildlife and not using herbicides during critical wildlife breeding periods, have been incorporated into these plans to minimize or avoid potential impacts from the implementation of chemical use in mitigation measures for wildlife resources. Even with the incorporation of these minimization measures the use of herbicides has the potential to result in additional impacts to wildlife species. Impacts to special status wildlife species are discussed in more detail below.

The use of herbicides in FTHL-occupied habitat increases the potential for herbicide to be incidentally applied to FTHL that may not be seen by herbicide applicators. Saharan mustard, Russian thistle, Mediterranean schismus, and red brome occur in FTHL-occupied habitat. All herbicides that are to be used on the project, including in FTHL-occupied habitat, would be applied directly and locally to weed species and would not be broadcast sprayed over a large area. As such, any accidental application of

herbicides to FTHL is expected to occur as cross spray exposure and would not be a concentrated application of herbicide. The application of glyphosate and triclopyr is not expected to affect FTHL's ability to persist in the project area because accidental exposure is not expected to result in mortality of FTHL. Overall, it is expected that the FTHL population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to FTHL when dense stands of weeds close off open areas of the desert that can be used by FTHL for basking in sunlight and foraging).

Similar to FTHL, the use of glyphosate and triclopyr has the potential to impact special status snake species as a result of incidental drift exposure to herbicide spray that may come into contact with snakes that are not observed by herbicide applicators. The application of herbicides is not expected to affect special status snake species' ability to persist in the project area because accidental exposure is not expected to result in mortality of snakes. Overall, it is expected that the special status snake population will not benefit or be reduced from the use of herbicides.

The use of glyphosate and triclopyr near burrowing owl and American badger burrows increases the potential for drift exposure to herbicide spray that may come into contact with burrowing owls and badgers. Saharan mustard, Mediterranean schismus, and red brome occur near burrowing owl and badger burrows that have been mapped within the OWEF project area during 2010 and 2011. All herbicides are to be used on the project, including near burrows, would be applied directly and locally to weed species using low-pressure backpack sprayers with a cone nozzle set to apply herbicide as a narrow stream, which minimizes drift. Sponge applicators may also be used to apply herbicide directly to dense populations of weed species by swiping the weeds with the applicator; no drift would occur through the use of sponge applicator. Herbicides not be broadcast sprayed over large areas. Direct (accidental) application of herbicides to burrowing owls is not expected to occur because burrowing owls will flush from a burrow when humans approach. Similarly, herbicide would not be applied directly to American badger burrows. To minimize the disturbance to burrowing owls and badgers, the Designated Biologist and Biological Monitors will keep weed maintenance personnel informed of the locations of burrowing owl burrows and no herbicide would be applied within 250 feet of active burrows. The application of herbicides up to 4 times per year is not expected to affect burrowing owls or American badgers ability to persist in the project area because neither species would not be directly exposed to herbicides and the level of human activity is not expected to result in substantial disturbance to either species (as compared to pre-project human activity levels). Overall, it is expected that the burrowing owl and American badger population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to burrowing owls when dense stands of weeds close off the owls' viewshed of surrounding habitat and invasive weed areas are also considered less preferred foraging areas for owls and badgers).

Similar to FTHL and special status snake species, the use of glyphosate and triclopyr has the potential to impact special status nesting bird species as a result of drift exposure to herbicide spray that may come into contact with nesting birds that are not observed by herbicide applicators. The application of herbicides is not expected to affect special status bird species' ability to persist in the project area because accidental exposure is not expected to result in mortality of bird species. Overall, it is expected that the special status nesting bird population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to most nesting bird species when dense stands of weeds close off open areas of the desert that can be used by birds for foraging and/or nesting).

Glyphosate would be used in PBS Essential Habitat to control Saharan mustard, Russian thistle, Mediterranean schismus, and red brome. All herbicides are to be used on the project, including in PBS Essential Habitat areas, would be applied directly and locally to weed species and would not be broadcast sprayed over a large area. Application of Glyphosate would result in mortality of weeds within 2 weeks of application. Direct application of herbicides to PBS is not expected to occur because PBS flee when approached by humans; in addition, project activities, including weed maintenance activities, would not be allowed to occur within 1,000 feet of PBS, in accordance with Mitigation Measure Wild-1t. To minimize the disturbance to PBS, the Designated Biologist, Biological Monitors, and Bighorn Sheep Monitor will keep weed maintenance personnel informed of the locations of PBS in the vicinity of the project. The application of herbicides up to 4 times per year is not expected to affect PBS' ability to persist in the project area because the species would not be directly exposed to herbicides and the level of human activity is not expected to result in substantial disturbance to PBS (as compared to pre-project human activity levels). Overall, it is expected that the PBS population will benefit from the use of herbicides because the amount of invasive weeds will decrease as a result of the weed control effort (invasive weed populations are considered detrimental to PBS when dense stands of weeds close off potential foraging areas for sheep and decrease the overall habitat quality for PBS).

4.21.11 Residual Impacts After Mitigation

Implementation of the avoidance, minimization, and mitigation measures described in Section 4.21 would mitigate the direct and indirect impacts to wildlife resources on the OWEF site, under CEQA, to a level below significance. Implementation of the required mitigation itself would not result in any additional impacts to wildlife resources. Residual impacts to wildlife resources following mitigation, if any, would be inconsequential.

The proposed OWEF and two build alternatives would impact FTHL, special status snake species, burrowing owl, golden eagle (and other migratory birds), nesting birds, bats, American badger, and Peninsular bighorn sheep. Implementation of Mitigation Measures Wild-1a through Wild-1hh, Wild-2a through Wild-2d, Veg-1a through Veg-1d, Veg-2a, and Veg-2b would substantially reduce the impacts to these wildlife resources. These measures provide requirements to avoid or minimize impacts that include but are not limited to: habitat restoration/revegetation and acquisition/preservation; monitoring of wildlife by specialized biologists; preconstruction surveys and relocation of certain special status species out of harm's way; restricting proposed OWEF activities in time and place to minimize impacts to species; adherence to approved plans to protect the FTHL, PBS, eagles, birds, and bats; and monitoring with reporting to relevant resource agencies to ensure compliance with all of the mitigation measures.

Implementation of the mitigation that requires habitat restoration/revegetation would require some ground disturbance, but it would occur in areas that were previously disturbed during proposed OWEF construction. Similar restrictions to those placed on construction, O&M, and decommissioning activities would be placed on activities associated with the restoration/revegetation. The restrictions would be included in the HRRP to effectively avoid or minimize impacts to special status species.

Without mitigation, the proposed OWEF would contribute to the cumulatively substantial losses of wildlife resources within the Yuha Desert. The avoidance and minimization measures as well as compensatory mitigation to offset direct, indirect, and cumulative impacts to wildlife resources would assure compliance with state and federal laws, and the impacts are expected to have no substantially adverse effects following mitigation.

4.22 Irreversible and Irretrievable Commitment of Resources

The BLM NEPA Handbook (H-1790-1 Sec. 9.2.9), the NEPA Regulations (40 CFR §§ 1502.16, 1508.8(b)), and CEQA Guidelines Section 15126.2 require a discussion of any irreversible or irretrievable commitments of resources which would be caused by implementation of the proposed OWEF, or one of the action alternatives; the relationship between short-term uses and long-term productivity of the environment; and any growth-inducing impacts.

Resources irreversibly or irretrievably committed to a proposed action are those used on a long-term or permanent basis. This includes the use of nonrenewable resources such as metal, wood, fuel, paper, aggregate and other natural resources. These resources are considered irretrievable in that they would be used for a proposed action when they could have been conserved or used for other purposes. Another irreversible or irretrievable commitment of resources is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

The OWEF would irretrievably commit resources over the 30-year life of the project. Construction of the proposed OWEF would commit nonrenewable resources during project construction and ongoing utility services during project operations. During project operations, oil, gas, and other nonrenewable resources would be consumed for maintenance purposes, although on a limited basis. After 30 years, the OWEF could be decommissioned and the land returned to its pre-project state, or the facility owners may wish to work with the BLM to replace the old facilities with a new re-powering project on the same site. In the event that the project is decommissioned, potentially some of the resources on site could be retrieved. However, full site recovery to its pre-project state may not be possible given the 30-year life-span of the OWEF and the many unknown variables that could affect the site. Open desert lands and sensitive desert habitats have potentially lengthy recovery time from disturbances such as development. Currently, the OWEF site is not entirely undisturbed because of ongoing off-highway vehicle use.

In addition, as a wind energy development, there will be an irretrievable commitment of groundwater due to the project as described in Section 1.3.9 (Water Usage, Amounts, Sources). However, water demand associated with construction and operation of the proposed OWEF is substantially less than water demand associated with conventional fossil-fuel developments and other renewable energy developments such as solar technology. As such, each megawatt-hour (MWh) of electricity generated by the proposed OWEF would save water that would otherwise be required for generation of electricity from other types of energy developments.

The OWEF is a renewable energy project intended to generate wind energy to reduce reliance on fossil fuels. Over the 30-year life of the OWEF, this renewable energy project would contribute incrementally to the reduction in demand for fossil fuel used to generate electricity, thereby resulting in a positive effect of the commitment of nonrenewable resources to the OWEF.

4.23 Short-term Uses of Man’s Environment and the Maintenance/Enhancement of Long-term Productivity

The BLM NEPA Handbook (H-1790-1 Sec. 9.2.9) and the NEPA Guidelines (40 CFR 1502.16) require a discussion of the relationship between short-term uses and long-term productivity of the environment from implementation of the proposed OWEF or one of the action alternatives. “Short term” refers to the total duration of project construction, whereas “long term” refers to an indefinite period beyond the construction of the project. The specific impacts of the proposed project vary in kind, intensity, and duration according to the activities occurring at any given time. The proposed project involves tradeoffs between long-term productivity and short-term uses of the environment.

The short-term uses of the environment as a result of the OWEF and its built alternatives include those typically found with wind energy development. Short-term impacts associated with construction activities described elsewhere in Chapter 4, Environmental Consequences, include effects to the natural environment, cultural resources, and recreation resources. These can be compared to the long-term benefits of the Proposed Action and its built alternatives all of which would provide for the production of clean, renewable energy consistent with Federal and State goals to increase production of renewable energy to help reduce dependence on fossil fuels.

As discussed earlier in Section 4.22, Irreversible and Irrecoverable Commitment of Resources, the Proposed Action and alternatives could permanently damage sensitive desert habitats, which in turn could adversely affect the long-term productivity of the area. However, these action alternatives would all also provide a long-term benefit by generating electric power without any increase in the use of non-renewable resources, such as fossil fuels, which would result in a benefit to air quality and a reduction in carbon-based emissions.

4.24 Growth-inducing Impacts

The BLM NEPA Handbook (H-1790-1 Sec. 9.2.9), the NEPA Regulations (40 CFR 1502.16, 1508.8(b)), and CEQA Guidelines Section 15126.2 require a discussion of any growth-inducing impacts caused by implementation of the proposed OWEF or one of the action alternatives.

CEQA Section 15126.2(d), Growth Inducing Impacts of the Proposed Project, requires a discussion of the ways in which the project could foster economic or population growth, or induce additional housing, either directly or indirectly in the surrounding environment. NEPA Regulations also provide for discussing the growth-inducing impacts of a project. (40 CFR § 1508.8(b) [“Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”].) The discussion must additionally address how a project may remove obstacles to growth, or encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

Growth inducement would occur if the amount of population or employment growth projected to occur as a result of the project would exceed planned levels. Increased development and growth in an area depend on a variety of factors, including employment and other opportunities, availability of developable land, and availability of infrastructure, water, and power resources.

As discussed in Section 4.13 (Social and Economic Issues), both construction and operational labor needs would be drawn from San Diego and Imperial Counties, with both providing a sufficient supply of labor for the project. Therefore, both OWEF temporary construction and permanent operational employees are expected to reside within the region. While some construction workforce may choose to stay immediately proximate to the OWEF site during the week, it is not anticipated that workers would permanently relocate locally for temporary construction employment. It is assumed few operational workers may choose to permanently relocate within a more proximate local area of the OWEF, with the city of El Centro assumed to be the likely residing place for such relocations. Assuming a worst-case scenario of all 30 full-time workers relocating locally (including an assumed average family size of three persons per household), these relocations would only account for an increase of 0.2 percent to the existing El Centro population. This worst-case potential local area relocation is considered negligible and is anticipated to be within forecasted growth projections of the area. Furthermore, as shown in Table 3.14-2, the City of El Centro has ample available housing for any operational workers who may choose local permanent relocation to the OWEF. Therefore, employment associated with the OWEF is not considered to generate an adverse direct growth-inducing impact.

With respect to inducing growth through removing barriers to development, such as through the changing of land use designations or providing utilities to previously undeveloped areas, as discussed in Section 4.6 (Lands and Realty), the OWEF and Alternatives would not result in the conversion of any land to

residential or commercial use. Therefore, the proposed OWEF and Alternatives would not involve the development of additional housing or alter land designations that could result in direct population growth. As described in Chapter 2 (Proposed Action and Alternatives), the OWEF would include the construction of twenty-three 34.5-kV circuits connecting into a 500-kV transformer and substation located at the central part of the proposed OWEF site adjacent to the new SDG&E SPL 500-kV transmission line. These transmission interconnections serve only to connect electricity generated by the OWEF to the grid, and would be located on and adjacent to land not designated for residential or commercial development. Therefore, proposed transmission line facilities associated with the OWEF would not induce growth.

With respect to inducing growth through providing access to previously undeveloped areas, the proposed OWEF would involve construction of temporary and permanent roads. However, as discussed in Section 4.16 (Transportation and Public Access), these roads would provide limited access to the proposed OWEF site only from the OWEF site entrances to substations and wind turbine generators. Project roadways would not provide access into other adjacent areas whereupon new access may create the generation of residential or commercial development. Therefore, roadway facilities associated with the proposed OWEF would not induce growth.

While the proposed OWEF would result in additional generation of electric power in the southern California region, the project would serve projected growth of the region while working toward achieving the goals of AB 32. Growth within the region is forecasted to continue with or without implementation of the proposed OWEF. Therefore, implementation of the proposed OWEF would be in response to anticipated future load growth and would be consistent with current regional planning projections.